AMERICAN ANNALS OF THE DEAF

Official Organ

Conference of Executives of American Schools for the Deaf
Convention of American Instructors of the Deaf

Edited by

IRVING S. FUSFELD

Under the Direction of

PERCIVAL HALL, of the District of Columbia
FRANK M. DRIGGS, of Utah
MADISON J. LEE, of Kentucky
OSCAR M. PITTENGER, of Indiana
ELWOOD A. STEVENSON, of California
IGNATIUS BJORLEE, of Maryland
J. W. BLATTNER, of Oklahoma

Executive Committee of the Conference

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AMERICAN ANNALS OF THE DEAF

Counseling the Deaf

By CHARLES E. MACDONALD, LL.B.
Principal, British Columbia School, Vancouver, B.C.

THE NEED FOR COUNSELING

IN MANY SCHOOLS for the deaf, the superintendent, the principal of either the vocational or academic department, or both, or some sympathetic member of the faculty attempts, after a fashion, the counseling function with little or no organized data of the individual concerned. The practice of making decisions for the pupils is all too prevalent in such schools. This procedure can scarcely be termed counseling; at any rate, it does not conform with the present approved practices. Such a haphazard approach to student problems cannot be expected to result in satisfaction to either counselor or counselee.

In order to be "fruitful," it is essential that counseling be an integral part of a well organized guidance program whereby the student may be trained to recognize problem situations and develop some background from which the counselor may profitably draw in his attempt to guide the student into making satisfactory adjustments and worthwhile choices. This is particularly true of the deaf, who, due to limited contacts, resulting in a poverty of experiences, are almost sure, when left without this special training, to develop erroneous concepts of educational and vocational life, harmful attitudes, and wasteful or faulty skills

and habits. It is essential, then, that with them care be exercised in the teaching function that such concepts, attitudes, skills and habits, together with a rich fund of information, be imparted, not alone for the usefulness which they in themselves possess for the individual, but also for the foundation created for the counseling function, if such is to be successfully pursued with the deaf.

The guidance program would be most profitable if introduced in the first year of the advanced department of a school for the deaf. This department includes those from approximately fourteen to twenty-one years of age and covers a range of approximately fifth grade to senior high, according to public school standards. Any attempt to introduce the program earlier would in all probability be ineffectual, due to the mental immaturity and the speech and language difficulties involved in the presentation of pertinent material. The success of counseling hinges on the results of interviews, and interviews depend upon the extent with which the interviewer and interviewee can communicate with ease and understanding and establish rapport.

Educational Adjustment Problems

The educational adjustment problems are not perhaps so numerous and perplexing in their nature as those which confront hearing boys and girls. That such problems do exist is evidenced by the fact that some boys and girls have been misled into spending a year or two in preparation for entrance to Gallaudet College who should have never been so encouraged and consequently would have been spared the distressing experience of failure in their attempt to matriculate. Efficient counseling would in almost all cases have avoided such a situation, and in like manner prevent misfits in other problems involving educational adjustments.

Vocational Adjustment Problems

Vocational adjustment problems confront almost all deaf boys and girls because of the limited occupational opportunities and the present overcrowding in those fields for which they have been trained. A counseling program, while it may

not prove to be a cure-all of vocational maladjustments, may serve greatly to minimize them. At any rate, it may materially relieve the situation wherein, for example, a boy spends four or five years part-time work in the print shop and, upon graduation, takes a steady job as a pretzel bender, either because he has found it almost impossible to find employment in the printing trade, or because he has never particularly cared for printing, but has hesitated to admit it and consequently drops it as soon as he gets away from school. Such situations are all too common and present a serious problem in most schools for the deaf. They will continue to do so until such time as schools adopt an efficient, well organized counseling program.

Counseling would take cognizance of a fact which many vocational experts seem to ignore, *viz.*, that all boys and girls, irrespective of mental level, aptitude and interests, cannot profitably or efficiently progress in the limited range of courses offered in a school for the deaf. Only relatively few will develop into efficient specialists capable of taking their places in the face of severe competition in the fields for which they have been long trained. Counseling would make it possible to discover the field in which the individual is most likely to succeed, and to direct that individual toward his goal, insuring happier adjustments and a minimum of avoidable misfits in vocational life.

Social Adjustment Problems

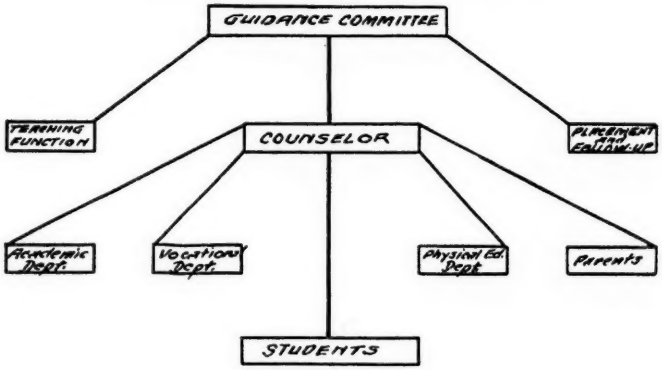
The failure of some deaf to make adequate social adjustments, either to the home circle or to the community, is not only unfortunate but most undesirable from the social point of view for the individual and for society. It is essential for the economic and social life of the deaf that they fit easily into a hearing society. Some of this difficulty undoubtedly arises from the fact that the deaf boy or girl spends the major part of ten or twelve years in a school which constitutes a deaf society and, upon graduation, finds himself thrust into a hearing world with which he has had comparatively little experience. While, in the very nature of things, this is perhaps to a large extent unavoidable, with

the problem fully appreciated and apparently everything possible being done to minimize the shock one important avenue of approach is overlooked, namely, the service an efficiently organized program could render in relieving the situation.

The counselor could for example make a careful study of the manner in which the deaf individuals adjust themselves to the home and hearing groups during the summer vacations, and any faulty adjustments found to have occurred within that period could be considered in subsequent interviews and carefully followed up.

The Organization and Tools

The need for counseling having been described, we may now consider the problem of setting up the guidance organization and of determining the most effective position in this set-up for the counselor in a school for the deaf to occupy. So important is this function that care must be exercised to insure the counselor a position within the "hub" of the guidance activity. The following diagram represents a workable organization for a school for the deaf.



The guidance committee should be directed by the superintendent of the school or some officer delegated to the duty because of special abilities in guidance procedure and capable of energetically advancing the entire program.

The counselor represents an important link in the set-up,

and as represented in the diagram, contact should exist between all departments, the home and the counselor.

The one probably best suited to assume this duty of counseling in a school for the deaf is the field worker. The very nature of the investigations and contacts the field worker continuously makes with the homes, and the position of neutrality with respect to vocational and academic departments, make this one individual the most desirable candidate for the position, providing, of course, that all other requirements are met. It is not enough merely to know the counselee's history, but the counselor must have a broad knowledge of the common problems of the deaf. He must be thoroughly at home with all forms of communication employed by the deaf. He must be thoroughly familiar with the deaf point of view, their attitudes and their particular group problems. This last is most significant in interpreting the individual counselee's problems.

In order to proceed, however, with the counseling function it is imperative that the counselor be thoroughly familiar with all the approved techniques of interviewing. Minor changes may be necessary to make the techniques applicable to the deaf, but a counselor familiar with the deaf should have little difficulty in effecting such changes.

The necessity for securing and maintaining confidence and co-operation from the various departments in the school and from the parents must not be underestimated. The counselor, while performing the duties of field worker, has an excellent opportunity of contacting the parents and should make the most of such opportunities. If the counselor understands and appreciates the mutual advantages to be gained through close co-operation between other departments and himself he will receive much worth-while support, but if he elects to play a lone hand he is sure to jeopardize the success of the counseling function.

The personality of the counselor is not to be overlooked because on this, perhaps more than any other factor, depends the success or failure of the interview. A friendly, sympathetic attitude toward the pupils need not detract from efficiency and is almost sure to develop confidence and

respect in the minds of the pupils. Unless this relationship is established, the pupils will seek to avoid the interviews or turn to another less qualified for counsel.

The record card is an indispensable aid to the counselor and because of its importance should be kept up to date and designed to record the individual's history over a period of years. A suggested form for recording simply and clearly all pertinent information is offered here, pages 101-102. This record card, if conscientiously maintained, should provide the essential data for a counselor of a deaf pupil.

A careful examination of the record form will disclose the fact that apparently no provision has been made for recording the results of intelligence, prognostic, or achievement tests and the like. This is not, however, an oversight, but purposely omitted. Such tests are seldom employed with the deaf, for they do not test intelligence or whatever they are designed to test, but become themselves language tests for the deaf. The results of such tests, then, would not only be unfair, but quite valueless, since the language difficulties of the deaf would present an imponderable and all important factor.

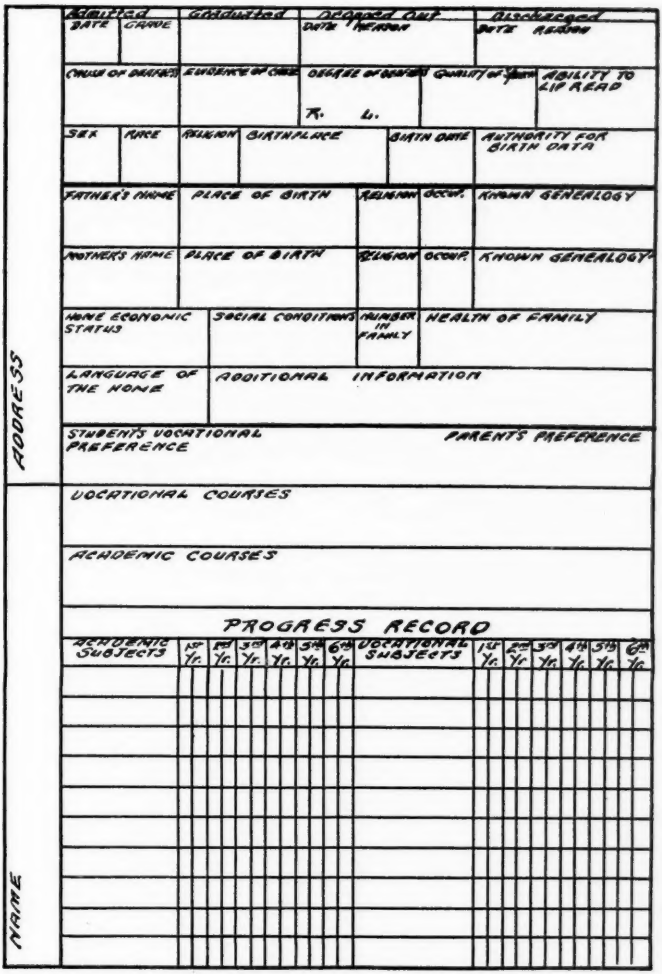
The Face-to-Face Interview

Earlier in this paper the suggestion was advanced that the counselor exercise his function with the pupils of the advanced department of the school. The reason for this limitation was attributed to the fact that only those of this department could fully understand and appreciate the value of the service and profit materially through its operation. It may be pointed out again that the pupils of this department would include most of those between the ages of fourteen and twenty-one of average or better-than-average intelligence. In the larger schools this group would range roughly from fifty to three times this number. This is small enough for effective counseling and large enough to justify establishing the program.

The numbers being small, it is most unlikely that any school at the present time would employ a full-time counselor, but the suggestion advanced in the set-up is that the

A Suggested Record Card for the Counselor

Front



A Suggested Record Card for the Counselor

Back

EXTRA-CURRICULAR ACTIVITIES

ACTIVITY	DATE	OFFICES

PERSONALITY TRAITS

	comments.
Cooperation	
Industry	
Leadership	
Personal Appearance	
Accuracy	
Reliability	

INTERVIEWS

DATE	STUDENT ALONE	PARENTS ALONE	BOTH	OBJECT	Officer	RESULTS

WORK ENTERED DATE

MARRIED DATE

REMARKS

field worker devote part time to this function. The counseling plan could work out quite successfully if the field worker allotted two full days a week for interviewing the pupil personnel. This would insure each individual perhaps three or four interviews each term. The counselor could arrange appointments for the two days he is to be in his office for that purpose.

It seems most desirable that the counselor conduct these interviews in a permanent office provided with comfortable chairs, a clear desk, and pleasant surroundings. This suggestion grows out of the desirability of giving the interviewee a feeling of privacy during the interview and of removing all feeling of interrupting more important business.

It is not only desirable but of utmost importance that the interviewee feel at ease and free from any feeling that he is "on the spot." In this respect much depends upon the manner in which the counselor receives the interviewee and gets to the purpose of the interview. There is no prescribed rule for all cases; much depends upon the resourcefulness of the counselor. Whatever he does or says at the outset must have the ultimate objective of speedily placing the interviewee in the right frame of mind to talk.

A good beginning may end in futility, unless the interviewer exercises skill in guiding the interview along the lines that lead definitely to the objective or purpose of the interview. The interviewee should be held tactfully to the point and it remains for the counselor to remember that it is his mission to gather the facts, help the interviewee to see the situation from other angles, and to lead him into making worth-while decisions in his own problems.

There are no prescribed methods for leading the interviewee to reach a decision. This would obviously be impossible since individuals, their experiences, and the like, differ widely. Much depends upon the ability of the interviewer to lead the interviewee to see the situation from other angles and to acquaint him with all the probable outcomes. If the counselor can do this efficiently, then there is every likelihood of the subject's making a worth-while decision expeditiously.

The case is not closed when the individual reaches a decision or choice. It remains for the counselor to follow up the case and watch the results. The outcome of the interview should be recorded on the individual's record form.

Carry-Over into Adult Life

The very purpose of the interview, as has been repeatedly emphasized, is to lead the individual into making worthwhile decisions or choices. Consequently, if the interview achieves this end satisfactorily, the result should make for satisfactory immediate adjustments in educational, vocational or social situations.

The experience gained in solving these problems in school should be of inestimable value to the individual after he leaves school, since the need for making adequate adjustments to society and industry will continue throughout life. It remains then an obligation of every school for the deaf to institute a counseling program to the end that this experience may become a part of the deaf person's equipment when he leaves school to take his place in society.

Vocational Needs of Today[1]

By TOM L. ANDERSON, M.A.
Principal of the Vocational Department, Iowa School
Council Bluffs, Iowa

I WISH WITH all my heart that one of us might peer into the future far enough to ascertain what will be required of us all, in the new social order forming about us. It would be especially nice if we could ascertain what position our deaf friends are to hold in this new order. It is becoming more and more apparent that they are no longer finding profitable employment along the lines wherein they formerly excelled. It is likewise apparent to those of us who are responsible for the practical training of deaf boys and girls that we are in a particular "hot spot." Personally, I am not at all inclined to "ride this out," in the faith that there will be an eventual return to "normalcy." Certain changes are demanded of us, and these changes will have to be effected if we are mindful of our duty.

I am going to assume that you are as tired of "bluffing" as I am. We have put up a brave front, we have put forward our vocational training efforts as something of vital importance in the lives of our pupils, yet we have been casting about for the answer to the question: Why are so few of our pupils following the trades they are taught in school? We have become quite clever in evading the fact that our pupils are doing about everything under the sun EXCEPT what they did in our trade schools, but we can still point with pride to the fact that most of them are self-supporting, industrious citizens. We speak of "transfer" and so on. Still, we must in some manner justify the large sums of money we are expending upon trades buildings, machinery, tools and materials, sums which loom large to our taxpayers today.

The nearest thing we have to a glimpse into the future is the Report on the CWA Survey of the Deaf and the Hard of Hearing, which I am told will appear some time in 1935.

[1] An address delivered before the Midwest Regional Conference of Executives of Schools for the Deaf, Council Bluffs, Iowa, November 7, 1934.

Mr. Day wrote me that up to the time he left the office of Education, April 30, they had coded about 21,000 questionnaires for the tabulators. Since then, the office has worked under the handicap of insufficient funds and a greatly reduced force. Gallaudet College Normal Fellows are helping some with the report. Mr. Day gives it as his opinion that the comments of the employers of the deaf and the hard of hearing, and the suggestions made by these employers as to the types of work they believe are best suited to the deaf, will be of great value to the schools, in shaping their vocational training policies.

We may be properly heedful of the trends in general education. Discussions of educators center about the changes made necessary by the elimination of child labor, and the consequent advancement of the age of employment; and the need of more facilities for adult education. Dr. David Snedhen of Columbia University makes the point that minimum age, ability, and other requirements must be established for vocational training centers "which shall assure (1) that the individual is *mature* enough (for a large number of American operative vocations, not less than 18 years, and for nearly all professional, managerial, farming, home-making, and other self-directing vocations at least 20 years) economically and effectively to acquire full competency in that vocation; (2) that the individual has had ample time previous to entry upon specific vocational training to acquire optimum amounts of teacher-given (as opposed to self-given, which will probably continue through life) *general* (non-vocational) education; (3) that the trainee will be fully acceptable for licensing and full responsibility entry upon the vocation immediately upon completing the prescribed curriculum of training."

From my own experience and study of the problems which are common to schools in this Midwestern Conference, I am confident that I can predict some of the trends in the employment of the deaf which we shall be forced to adopt. And regardless of the fact that we seem to be just a bit too heavily ballasted with the Eastern industrial idea of educating our boys and girls to be mill and factory hands,

power-machine operators, and the like, I am optimistic that we can meet the required changes with equipment we now have, with a minimum of internal disorder. The main question is, Are school managements flexible enough, is our teaching personnel adaptable enough, to meet an abrupt change in the objective we must set up? I am confident that we can meet this requirement.

In the past, we have been too much inclined to shape our educational policies like those of the Eastern schools. Academically, we can do this, since practically all schools are pointing their pupils for the Gallaudet College entrance examinations. Vocationally, we actually can express our objective in the same words, but they have for us a vastly different meaning. Pennsylvania and Iowa can each claim that they seek to train their graduates to become self-supporting citizens. But citizenship in the Midwest means something entirely different from the same term in Pennsylvania or New Jersey.

Let us analyze our vocational training in some respects, to realize more accurately where we have been headed.

A peculiarity of our system is the emphasis upon the skilled trades for all. Now, in the general run of citizenry, scarcely one man in ten can meet the occupational demands made upon its workers by a skilled trade. We have, therefore, from the very beginning of their trades education, imposed a serious handicap upon our pupils. Most of our schools lay such emphasis upon this training for the skilled trades that they neglect to provide suitable occupational training for the large majority of pupils who either cannot make the grade demanded of the skilled workman today, or else clearly will not remain in school long enough to complete the necessarily rigorous training. The requirements of industry have been raised to such a degree that only our most favored pupils can reasonably be expected to qualify. These we encourage to set their courses for a higher education and presumably line them up for the superior advantages in life which go with a college education. Still, we have continued to stress the skilled trades for all, requiring expensive buildings, costly machinery and materials, and teachers who are

such independent specialists that nobody around the place can substitute for them when they are occasionally absent. No matter how commendable our zeal to offer more and better occupational training to pupils in our schools for the deaf, it is open to question whether we have builded wisely with the greatest good to the greatest number in mind, or on the other hand have erected a top-heavy structure, ill suited to our practical purposes, considering the classes we must work with and further considering the economic changes in recent years.

Now, for instance, let me take up the subject of printing, handled as a vocation for graduates of our state schools. While some of our schools can claim success in placing their printing students in the trade, the number of deaf printers employed today is less than ever before. The requirements have mounted until only the expert can continue to hold jobs. We can thank NRA for the latest death blow. Take the following significant statement from *Printing Education* for May, 1934. This is the official organ of the United Typothetae of America (Employers' group): "... a larger viewpoint of printing has come as a result of the Graphic Arts Code. It will be difficult in the future to think of printing apart from the many and varied processes included under the more general term The Graphic Arts. We predict that courses in the Graphic Arts will soon take the place of courses in printing in the schools that can give instruction in more than one of the printing processes. Graphic Arts education will in time supplant printing education as a general name for our organized educational movement."

The Graphic Arts Code has brought a startling fact in regards to the skilled personnel of the industry, according to a later statement in the same article. "We have been astonished to learn of the large number of employees bearing the name of typographers, pressmen, linotype operators, monotype operators, proofreaders, etc., who apparently cannot qualify, according to some employers, even under the minimum wage ratings. Either these persons have come into the industry through the back door, or some of the schools are not doing the job expected of them. The fact remains

that the industry needs education more than ever."

This statement sheds light on the reason so many veteran deaf printers have been thrown out of employment. Are we justified, then, in persisting in this effort to supply the printing industry with apprentices of a grade they can no longer use? Can we revise our printing instruction upwards to the extent demanded under present conditions? I do not think we can. In my opinion, the day has passed when we can expect to place our state school graduates in the printing industry; even under the most favorable circumstances, their education will be incomplete. If we face this fact, then we will revise the objective of our printing plants from "vocational" to "pre-vocational," and maintain them purely for their educational value.

Some of our schools, through political connections, are undertaking to do state printing. The pupils can do this work, as assistants to an adequate force of skilled printers, and the school can point with pride to their performance. However, considering the fact that the general printing industry is expected to employ these pupils later on, and considering also the fact that when a State institution does work that ought fairly to go to private industry, the industry is thereby antagonized, we cannot expect the industry to look with favor upon the pupils of these schools which are operating to deprive them of legitimate business. I cannot emphasize this point too strongly: That a school is defeating its own purpose when it enters into competition with private industry, no matter how convenient such an arrangement may be. The industry, not the State government, is the ultimate employer of the apprentice being trained in the trade school. I emphasized this point in my paper at the Colorado Springs conference.

As to barbering and cosmetology, we are teaching it practically, but a factor beyong our control bars our pupils from employment until they have met the requirements of the State Board of Barbering and Cosmetology. We have fought this board for some years, but they will not permit our girls to take the examinations unless they first take a course in a recognized beauty college. This means a repetition of the

work we give them, in an outside concern, at considerable cost, and then the examinations. The board finally agreed to admit our boys directly to the state examinations, but the trade language of barbering and cosmetology is couched in medical and surgical terms very difficult for our pupils to grasp, regardless of their practical mastery of the work. We have yet to see one of our graduates become certified, although several are bootlegging their services in their home towns.

Baking as a skilled trade has seen its day. We have only five deaf bakers in Iowa, after all the years we have maintained excellent instruction in the trade, and ample practice. These men all work for starvation wages. Why? A factor beyond our control. The big chain bakeries have made it unprofitable for the small concern to operate, and the mechanized chain bakeries employ the pick of the trade.

Compensation insurance companies are barring the deaf from every insurable enterprise considered at all hazardous. The organized deaf have been after them, and they assume innocence, but the fact remains that the PWA will not take on a deaf man for as much as pick and shovel work, for fear he will be injured. Even where no such discrimination is a fact, the foreman will claim such to be the case. Insurance companies are private concerns, and they operate to reduce all possible risk.

We can brag all we please about the motor abilities of the deaf, but we must conclude that the skilled trades today are demanding more and more general intelligence in addition to motor ability. Also that other factors more or less beyond our control have come to operate against the success of our efforts.

As to our general policy, I honestly believe that our whole vocational training policy here in the Middle West should be revised sharply downward, for all pupils below college grade. Just as we agree that a more practical academic course is needed for the average pupil, when only one per cent are headed for college, we should likewise provide a more abundant occupational opportunity for the large per-

centage of pupils who will never fit into the picture as skilled tradesmen.

In most of our schools, we are surrounded by deaf employees who are doing the unskilled work required about the plant. Much necessary work, commonly called the "chores," is carried forward by the pupils. Among our employes we have deaf janitors, laundry help, yard boys, kitchen help, maids, farm help, and so on. Yet we have been strangely indifferent to these lines of work as possible "occupations of our graduates," or we have been unwilling to list these in the ANNALS as "Industries Taught" in our schools.

Since these employes and pupils serve our own needs so effectively, may they not find better chances of success in similar places outside, rather than be forced to strain to fill places in the higher brackets where the requirements are away over their heads?

An inventory of the average school plant will show a number of lines of work in which we might be training some of our less favored pupils. This training ground includes the farm, the dairy, the poultry yard, the garden, the campus, the heating plant, the garage, the laundry, the kitchen, the household, in fact everywhere there is work to do which justifies the employment of some person to do it. In all these places, the pupils are likely to be thrown into contact with hearing employes, which is exactly what we want if they are to be accustomed to work with hearing persons. The theory, in short, is that every employee of the school should be regarded as a teacher of young people, in some capacity or other. The plant and equipment are provided.

Mr. Harvey B. Barnes of the Illinois School has the right idea in his solution of the problem of "chores" by setting up the chore organization on a school credit basis, requiring employees who supervise the chores to encourage the pupils through a system of supervision and grading which elevates that type of work to a level of respectability with arithmetic and geography, thus utilizing the lowly chores as means of occupational training and character building. For some years we have justified our vocational training on the

ground that it does not really matter what a boy does so long as he learns to do his work faithfully and well, and acquires the desirable qualities of industry, application, reliability, etc. The same qualities can be taught just as well through the proper manipulation of the school chores as through a skilled trade.

I do not think that Mr. Barnes' device has been getting the attention and the praise it deserves, for in it we have the first step in the general plan which I favor, for making broader and more effective use of all the possible facilities of our school plants.

The required adjustment is possible if we have the determination and the foresight to place the right people in the key positions, now that we have such a wide assortment of educated help available for almost any kind of job. Every employee of the school must be considered in the light of a teacher to some extent, and to some extent be answerable to a central authority, such as the vocational principal, who keeps the records. Mr. Barnes calls his device "Coöperative Industries." We might call it "Community citizenship," shape our requirements accordingly, and award grades on a scale relative to the display of the qualities of citizenship in the humbler tasks. This is social training as well as occupational.

My theory all along has been that the salvation of these young people as individuals, particularly during the first ten years out of school, lies in their ability to return to the home community where they are known and given a kindly tolerance, and there follow some line of activity which the community of relatives, friends, and neighbors will support. This theory does not harmonize with the Eastern plan of making mill and factory hands out of them all. But I realize that the problem of making a living in Pennsylvania, for instance, is not the same problem faced by the young people of Iowa, Illinois or Oklahoma. The question to be considered is: What kind of home have they to return to?

To a demand that we teach more agriculture, we have been forced to reply that agriculture is not a subject which

can be taught in rotation with public school subjects, nor are the young people in school during the months most favorable to practice in the fields.

In my opinion, the teaching of general farming does not offer the solution we seek, so much as does the teaching of what I shall call the "agricultural auxiliaries." I would shape our instruction in carpentry, leather work, painting, etc., not so much with the aim of making carpenters, painters, shoemakers, etc., for a labor market which no longer wants them as such, but more with the aim of grounding farm boys in these trades, when the knowledge and skill will be useful on the farm. Likewise could we teach the rudiments of blacksmithing, welding, grinding and sharpening of tools and the repair of automobiles, trucks and tractors.

We should adopt the general shop idea now being followed in the country high schools, the purpose being to give boys of the farm a general knowledge of the trades and handicrafts which will serve them on the farm. Through their ability along these lines, they should be able to serve their parents and neighbors well. They can have some gardening, floriculture, and landscape work. The boy or girl who can beautify the home grounds will find his services in demand among the neighbors. But above all the general shop seems to fit our needs in this region better than any other device, as far as it goes. By adopting this idea, we can still utilize the equipment and teachers we have. We merely revise our aim.

So far I have said little about our girls. They have always been a problem in an occupational sense. Most of us stress the household arts, some give typing as a high school subject, in addition to cosmetology. Outside of household service, about the only line of profitable industrial employment open to our girls in the cities hereabout has been power-machine operation. We have not featured this in our Midwestern schools. The NRA Code put many deaf operatives out of this line. A statement from Kentucky in the recent industrial report to the National Association of the Deaf is significant. A Kentucky deaf woman was earning up to $6

a week at piece work. The Code specified $9 a week minimum wage. Since this woman could not possibly turn out $9 worth of piece work, she was let out.

We can continue to stress the humbler household specialties for our average girls, but freshen up the the course and make it more interesting and attractive. It would mean something definite to have our Iowa and our Missouri deaf girls so well trained as housewives that the industrious young men of the country would prefer them as helpmates, above all others. It takes two capable persons to make a happy home.

We have considered the placement officer idea to some extent. I believe a placement officer would be valuable for service among the adult deaf, but I am skeptical that he could succeed if expected to place our young people profitably, direct from the schools. My instinct looks to the home community as a proving ground and a seasoning device, before a placement officer can expect to impress employers. In a large sense, I hold that parents are our natural placement agents. It is their duty to aid us somewhere along the line; the State should not be expected to do everything for the deaf child any more than for the hearing child. However, if our deaf children are so poorly socialized, so ill-adapted to home community life that they are apt to disgust the father, he will not care to recommend them to possible employers. Parents should naturally take a greater interest in their deaf children who are properly socialized, and by this I mean something deeper than ability to speak and to read lips. In her paper on "After-School Adjustments," Mrs. Petra Howard, Minnesota State Labor Commissioner for the Deaf, made a strong plea for more preparation for family life. She pointed out that the deaf person's chief difficulty in getting along at home after school days can be traced to his ignorance of the ordinary problems of family life in his own home; that he is inclined to flee from them rather than to face them out, as the other members of the family must do.

Our aim should be more social, more closely concerned with intelligent community living, and less of the mill and

factory hand sort of thing. At the same time, each young person should be trained so as to be "handy," where his ability to take hold intelligently when opportunity presents itself may mean profitable employment. So I say that better socialization, increased versatility, and not mere mechanical specialization will be the order of the new day. Leave specialization for development after maturity.

In this paper I have recommended that we train more of the average deaf for the humbler tasks of life. I realize that I lay myself open to the criticism of the organized deaf, for apparently wishing to degrade the deaf. A little reflection will allay any such criticism. We merely seek to elevate the tasks the deaf are doing anyhow, and to broaden their field of usefulness in honorable employment. The social organizations among the deaf are not as class conscious as those among the hearing. In our organizations, the janitor can be as highly respected as the school teacher, if he is properly socialized. Parents who want the best for their children may object. I hear that one superintendent got into a row with some parents who objected to having their son work in the laundry. The academic department has to contend against the same false pride in handling pupils considered incapable. Proper handling of the humbler tasks can lend them considerable respectability in the eyes of the community.

The Federal Survey of the Deaf and Hard of Hearing

Part I
Preliminary Data

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[This is the first of a series of reports in analysis of the data collected in the nation-wide survey of the deaf and hard of hearing by the United States Office of Education early in the year 1934. The work of preparing these reports has been done by the Fellows of the Normal Department of Gallaudet College collaborating with the Office of Education. The preparation and classification of the tabular information were supervised directly by the Office of Education. The interpretation of the data and the conclusions derived are, however, the work of the individual writers of the separate parts of the report. A complete report of the entire project will be published by the United States Office of Education at a later date.—*Editor* Annals.]

INTRODUCTION

IN DECEMBER, 1933, the United States Office of Education was authorized by the Federal Civil Works Administration to launch a survey to determine the types of occupations for which deaf and hard-of-hearing young people can be successfully trained.

This survey was carried out in the early months of 1934 under the immediate direction of Dr. Elise H. Martens, senior specialist in the education of exceptional children in the Office of Education, and Mr. Herbert E. Day, formerly superintendent of the Missouri School for the Deaf. Mr. Day was called to the Federal Office of Education for the special purpose of assisting with the project.

This survey was conducted in twenty-seven different states and the District of Columbia by 322 field workers under the direction of 44 volunteer supervisors, who were in every case executives of schools for the deaf, or persons otherwise directly interested in their welfare.

The field workers made contacts with the deaf and hard of hearing in their respective territories. They interviewed 19,580 deaf and hard-of-hearing persons and secured information needed for an analysis of their occupational history

TABLE I

NUMBER OF PERSONS INCLUDED IN SURVEY (BY STATES)

	Total	*Male*	*Female*
Arkansas	270	207	63
California	1,284	752	532
Colorado	622	365	257
Connecticut	200	144	56
District of Columbia	152	84	68
Florida	312	197	115
Illinois	1,590	1,148	442
Iowa	354	243	111
Kansas	192	125	67
Maryland	415	306	109
Massachusetts	1,171	703	468
Michigan	2,443	1,886	557
Minnesota	667	377	290
Mississippi	409	338	71
Missouri	876	573	303
New Jersey	614	41	203
New York	2,416	1,564	852
Ohio	1,294	868	426
Oklahoma	493	358	135
Oregon	342	191	151
Pennsylvania	773	503	270
South Carolina	185	123	62
South Dakota	183	142	41
Tennessee	240	171	69
Utah	178	108	70
Virginia	701	477	224
Washington	414	296	118
Wisconsin	790	591	199
Total	19,580	13,251	6,329
Percent		67.7	32.3

and certain personal data. This information was transmitted through the volunteer supervisors to the Office of Education in Washington, where it was subjected to detailed statistical treatment.

Of the 19,580 persons interviewed, 13,251 or 67.7 per cent were men, and 6,329 or 32.3 per cent were women. These were distributed among the various states as given in Table I.

DISTRIBUTION OF AGE

Table II shows how the persons interviewed were distributed as to age. In considering the total of men and women, it is interesting to note that the highest percentages occur in the age range extending from 30 to 50 years and that the numbers decrease on either side of these intervals. This is to

TABLE II
AGE OF WORKER

	MALE		FEMALE	
	Number	*%*	*Number*	*%*
Total number responding.	13,227	100.0	6,282	100.0
16–19 years.....	167	1.3	146	2.3
20–29 years.....	2,413	18.2	1,500	23.9
30–39 years.....	2,857	21.6	1,494	23.8
40–49 years.....	2,853	21.5	1,456	23.2
50–59 years.....	2,459	18.6	1,109	17.6
60–69 years.....	2,297	17.4	549	8.7
Over 70 years of age ...	181	1.4	28	0.5
Unreported.....	24		47	

be expected, since the largest group of wage earners occurs in these years. In most intervals it is found that the percentages of males and females correspond very closely.

RACE AND NATIVITY

A total of 19,576 gave information regarding race. Of these 19,143, or 97.8%, belong to the white race; 411, or 2.1%, belong to the Negro race; 20, or 0.1%, are Indian and 2 are Orientals. Thus it will be seen that the study is concerned mainly with the problem of deaf or hard-of-hearing persons of the white race.

Since so large a majority of the persons interviewed were found to belong to the white race, it would be well to determine whether or not a correspondingly large number of the same group are native-born Americans. The survey shows that of the 19,559 persons responding to the question concerning nativity 13,325, or 68.1%, were native born of American parents, and 4,358, or 22.3%, were native born of foreign parents. These two figures might be combined into one group of 17,683, or 90.4%, native born. This leaves only 1,876, or 9.6%, persons who were foreign born. Since the majority of the persons interviewed were of the white race and native born, it is a fair assumption that the survey was carried out with a typical American population handicapped by defective hearing.

Degree of Deafness, Means of Communication, Lip-Reading Ability

Of the 19,553 persons responding to the question of degree of deafness, approximately 50 per cent said that they could understand loud speech without an earphone, while 43.6% could not hear speech at all understandingly. A few claimed to be able to understand speech with an earphone. The exact figures are given in Table III. It is thus evident that the survey included persons of varying degrees of deafness. This factor would greatly influence other items considered in the investigation.

The most usual means of communication with the foreman or employer was found to be spoken language. Sixty-four and seven-tenths per cent of the 19,325 who responded said that they communicated with their employers by spoken language; 26 per cent communicated by writing, and 9.3 per cent used signs or the manual alphabet.

With regard to the lip-reading ability of these same persons, there was a response from 19,555 persons. Of these 40.5 per cent said that they had no ability to read lips; 31.5 per cent claimed that they could read lips to a limited degree; but 27.7 per cent said they read lips well enough to understand conversation. The percentage of women who claimed

TABLE III
Degree of Deafness

	TOTAL		MALE		FEMALE	
	Number	%	*Number*	%	*Number*	%
Total reporting	19,553	100.0	13,231	100.0	6,322	100.0
Understand loud speech without earphone	10,030	51.4	6,373	48.2	3,657	57.9
Understand loud speech with earphone	1,009	5.0	609	4.6	400	6.3
Cannot hear speech at all understandingly	8,514	43.6	6,249	47.2	2,265	35.8
Unreported	27		20		7	

lip-reading ability was greater than the percentage of men, as is shown in the following figures:

	Male (13,238)		Female (6,317)	
	Number	*Per cent*	*Number*	*Per cent*
No ability whatsoever	6,261	47.3	1,656	26.2
Very limited ability	4,058	30.7	2,168	34.3
Enough to understand conversation	2,919	22.0	2,493	39.5

Age and Manner of Onset

TABLE IV

Age When Deafness First Noticed

	TOTAL		MALE		FEMALE	
	Number	*%*	*Number*	*%*	*Number*	*%*
Total reporting.....	19,535	100.0	13,221	100.0	6,314	100.0
Age unknown.....	2	0.0	1	0.0	1	0.0
Infancy (under 2 yr.).....	4,972	25.6	3,539	26.7	1,433	22.7
Childhood (2–12)...	5,998	30.7	4,228	32.0	1,770	28.0
Adolescence (12–18)	1,946	9.9	1,030	7.8	916	14.5
Maturity.....	6,617	33.8	4,423	33.5	2,194	34.8
Unreported.....	45		30		15	

Only 4 of the entire 19,535 giving information on this point could not say at what age deafness came upon them. The 25.6 per cent who became deaf before the age of 2 years doubtless had no usable amount of experience in speech or language. Among the 30.7 per cent who became deaf under 12 years of age there must have been varying amounts of experience in speech and language. But most of those becoming deaf after twelve years should have considerable use of language; and especially is this true of the 33.8 per cent who did not become deaf until adulthood. This number should have both speech and language.

It is to be noted that 4 per cent more of the men than of the women were listed as having become deaf before two years of age; the same is true of those becoming deaf from 2 to 12 years of age. Almost twice as many women lost their hearing during the adolescent period than men; while almost the same per cent of both men and women lost their hearing in adulthood.

How did deafness come upon this group? Was it a gradual

process with most of them, or did they lose their hearing suddenly? Only 2.5 per cent of the 19,039 who answered this question said that they did not know the manner of onset of their deafness. Deafness came suddenly to 41.3 per cent. But with the remaining 56.2 per cent it was a gradual process.

The Causes of Deafness

TABLE V

CAUSES OF DEAFNESS

	TOTAL		MALE		FEMALE	
	Number	*%*	*Number*	*%*	*Number*	*%*
Total reporting cause of deafness	19,533	100.0	13,222	100.0	6,311	100.0
Cause unknown	4,691	24.5	3,077	23.2	1,614	25.6
Congenital	2,226	11.3	1,563	11.6	663	10.5
Following illness	10,117	51.4	6,657	50.3	3,460	54.8
Following operation	433	2.2	229	2.1	204	3.2
Accidental injury to ear	2,031	10.4	1,667	12.6	364	5.8
Old age	35	0.2	29	0.2	6	0.1
Unreported	47		29		18	

Of those who reported on the question, 24.5 per cent said that they did not know the cause of their deafness, and 11.3 per cent stated that they were congenitally deaf. It is probable that an appreciable number of the 24.5 per cent who listed "cause unknown" would fall into the congenital class if their cases could be traced accurately. Illness is the greatest cause of deafness; 51.4 per cent of the persons reporting could trace the cause of deafness to that source. An accidental injury to the ear was the cause in 10.4 per cent of the cases, and only 2.2 per cent became deaf following an operation. By combining the percentages becoming deaf from illness, accidental injury to ear, or following an operation, it is found 64 per cent were made deaf by such causes, and 35.8 per cent either congenitally deaf or deaf from an unknown cause.

Mode of Living and Number of Dependents

By far the largest percentage of the 19,451 persons who gave information lived at home; those who lived with other

relatives comprised 8.4 per cent; 5 per cent were living with other deaf persons and 8.7 lived alone or resided at a hotel, or boarding house.

Living at home	15,149 or 77.9%
Living with relatives	1,652 or 8.4%
Living with other deaf persons	965 or 5.0%
Living alone	838 or 4.3%
Boarding	847 or 4.4%

In answer to the question concerning number of dependents, information was received from 19,572 persons. Of these 36.6 per cent said that they had no dependents at all; 41.1 per cent had only one or two dependents. Thus there were 77.7 per cent with two or less dependents. Also, 15.7 per cent had 3 or 4 dependents, and 6.6 per cent had more than 4.

Membership in Trade Unions, Religious or Fraternal Organizations

Only 10.7 per cent of the 19,529 persons who reported said that they belonged to a trade union. A much larger percentage of men—13.7—belong to trade unions than do women—4.6.

TABLE VI

Membership in a Social or Fraternal Organization

	TOTAL		MALE		FEMALE	
	Number	*%*	*Number*	*%*	*Number*	*%*
Total number reporting	19,517	100.0	13,201	100.0	6,316	100.0
Belong to some organization	6,736	34.5	4,638	35.1	2,098	33.2
Do not belong to any social organization	12,781	65.5	8,563	64.9	4,218	66.8
Unreported	63		50		13	

A greater proportion of the deaf persons interviewed stated that they belonged to a social or fraternal organization. It was found that 34.5 per cent of the total number, 19,517, belonged to some social or fraternal organization, and that 65.5 per cent did not belong to any such organization. These total percentages are quite similar for both the men and women.

With regard to affiliation with a religious organization, the percentages are almost the same as those given in Table VI, but their positions are almost exactly reversed; 65.3 per cent of 19,545 persons said that they were affiliated with a religious organization, while 34.7 per cent said that they were not. The percentage of women who belonged to religious organizations was slightly higher than that of the men.

TABLE VII

AFFILIATION WITH RELIGIOUS ORGANIZATIONS

	TOTAL		MALE		FEMALE	
	Number	*%*	*Number*	*%*	*Number*	*%*
Total number reporting	19,545	100.0	13,228	100.0	6,317	100.0
Affiliated with religious organizations	12,768	65.3	8,293	62.7	4,475	70.8
Not affiliated with religious organizations	6,777	34.7	4,935	37.3	1,842	29.2
Unreported	35		23		12	

EDUCATION

To interpret successfully the data obtained in the survey one must know something of the educational status of the persons interviewed. Of the 19,483 persons giving information concerning their education almost 50 per cent had at-

TABLE VIII

HIGHEST GRADE OF SCHOOL WORK COMPLETED

	TOTAL		MALE		FEMALE	
	Number	*%*	*Number*	*%*	*Number*	*%*
Total number reporting	19,483	100.0	13,190	100.0	6,293	100.0
Never attended school	123	0.6	100	0.7	23	0.3
Attended elementary school	9,536	48.9	7,072	53.6	2,464	39.2
—High school	7,337	37.7	4,568	34.7	2,769	44.0
—College or University	2,487	12.8	1,450	11.0	1,037	16.5
Unreported	97		61		36	

tended only the elementary school. Less than 40 per cent had attended high school, and only about 13 per cent had attended college. The number of persons attending and the educational level attained is given in Table VIII.

The report for 9,203 persons—47.2 per cent of the entire group—was that they had attended a school for the deaf; the largest percentages of these attended for a period of 10 to 13 years, the next largest group having attended from 5 to 9 years. The distribution of the entire number as to length of time spent in a school for the deaf is given in Table IX.

TABLE IX

ATTENDANCE AT SCHOOL FOR THE DEAF

	TOTAL		MALE		FEMALE	
	Number	*%*	*Number*	*%*	*Number*	*%*
Total number responding.....	19,553	100.0	13,239	100.0	6,314	100.0
Attended 1–4 years	972	4.9	605	4.5	367	5.8
—5–9 years.....	3,356	17.1	2,543	19.2	813	12.9
—10–13 years...	3,727	19.4	2,767	20.9	960	15.2
—14–17 years...	661	3.3	466	3.6	195	3.1
Attended, but time not given.....	487	2.5	305	2.4	182	2.9
Did not attend....	10,350	52.8	6,553	49.4	3,797	60.1
Unreported.....	27		12		15	

OCCUPATIONAL TRAINING

A large number of the deaf persons interviewed had received some kind of occupational training in a public high school, a school for the deaf, or through some other means. Of the 11,096 persons who said they had had occupational training 3,881, or 35.0 per cent, received such training in a public high school or trade school, and 7,215, or 65 per cent, received this training in a school for the deaf.

Of the entire number of women who received occupational training 53.3 per cent were trained in a public high school, and 46.7 per cent were trained in a school for the deaf. The difference in the per cent of men trained in the two types of schools is much greater; only 25.7 per cent were trained in

a high school, but 74.3 per cent received occupational training in a school for the deaf.

The extent to which occupational training was followed is given in Table X.

TABLE X

EXTENT OF OCCUPATIONAL TRAINING FOLLOWED

	TOTAL		MALE		FEMALE	
	Number	%	*Number*	%	*Number*	%
Total number reporting	10,145	100.0	6,906	100.0	3,239	100.0
Training followed altogether	3,064	30.2	1,862	26.9	1,202	37.1
—To a large extent	1,650	16.3	1,011	14.7	639	19.7
—To a small extent	1,635	16.1	1,125	16.3	510	15.8
—Not at all	3,796	37.4	2,908	42.1	888	27.4
Unreported	1,159		616		543	
Received no trade training	8,276		5,729		2,547	

More women than men who received occupational training stated that they had followed that training either altogether or to a large extent. On the other hand, more than 40 per cent of the men said that they followed their training not at all.

With such a picture of the personal data of the persons included in the survey one should be able to interpret more satisfactorily the economic problems of the deaf as they are presented in subsequent chapters of the report on the Federal Survey of the Deaf and Hard of Hearing.

The topics to be considered in further papers of this report will be presented in the following order: Part II: Employment Status; Part III: Present Earnings; Part IV: Occupational Success and Related Factors; Parts V and VI: Types of Occupation Followed.

The Federal Survey of the Deaf and Hard of Hearing

Part II

The Employment Status of the Deaf and Hard of Hearing

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OF THE 19,541 deaf and hard-of-hearing persons answering the questionnaire regarding employment status, 10,497, or 53.7%, replied that they were then employed. Of these 10,497, a total of 7,378 were men and 3,119 were women. This is not a discouraging statement when compared with statistics concerning all industrial workers, as issued in a bulletin by the United States Department of Labor for August 1934. The average employment for 1929 was given as 104.8, for 1933 as 69.0[1] Only 65.8% as many were employed in 1933 as were employed in 1929. The two sets of figures, for the deaf and hard of hearing on one hand and for all industrial workers on the other hand, were not altogether comparable, but the labor statistics clearly showed that loss of employment had been general for the last few years.

In choosing at random specialized industries, it was found that each field had suffered heavy losses of employment. The figures reporting employment of iron and steel workers showed that, whereas 881,000 were employed in 1929, only 503,400 were employed in 1933.[2] The number of wage earners in the manufacture of machinery, excluding transportation equipment, was 1,105,700 in 1929 and 517,000 in 1933. That is, only 46.8% as many persons were employed in 1933 as were employed in 1929. In noting the number of employees engaged in the manufacture of fabrics, there were 1,095,900 in 1929 and 952,600 in 1933. Rubber indus-

[1] Index based on three-year average, 1923-25, as 100.
[2] "Trend of Employment, 1934," Serial No. R. 164, Bureau of Labor Statistics, U. S. Department of Labor.

tries employed 149,100 persons in 1929, and 99,300 in 1933.

We may readily conclude from the foregoing figures that a large percentage of unemployment is not peculiar to the deaf, but is true of industrial employment in general. Most of the deaf and hard of hearing find employment in industrial fields rather than in the professions. This tends to make the figures more nearly comparable.

TABLE I
EMPLOYMENT STATUS

	TOTAL		MALE		FEMALE	
	Number	%	*Number*	%	*Number*	%
Total reporting.....	19,541	100.0	13,226	100.0	6,315	100.0
Now employed..	10,497	53.7	7,378	55.8	3,119	49.4
Now unemployed						
Less than 1 year	2,134	10.9	1,348	10.2	786	12.5
1 to 2 years....	1,663	8.5	1,093	8.2	570	9.0
2 to 3 years....	1,593	8.2	1,150	8.7	443	7.0
More than 3 years.....	3,654	18.7	2,257	17.1	1,397	22.1
Unreported.....	39		25		14	

The survey indicated that unemployment is approximately the same for both sexes. Table I shows the relation.[1]

CAUSES OF UNEMPLOYMENT

The survey provided for a study of the causes of unemployment. These are listed in Table II. The results were interesting but in interpreting them the presence of the so-called "personal equation" must be kept in mind since the reasons were given by the unemployed persons.

The most frequent cause given by both sexes was reduction of force. The percents were 40.2 for men and 27.8 for women. This was to be expected from a consideration of the loss of employment in all industrial fields. For the entire group the closely related causes, namely, "Shop closed" and "Depression" were respectively third and fourth in the order of frequency. The handicap of hearing defect was given as second in frequency.

[1] All of the tabular matter that follows, Tables I to XV inclusive, are based upon information obtained from questionnaires given 19,580 persons—13,251 males and 6,329 females.

TABLE II

IF UNEMPLOYED, REASON FOR UNEMPLOYMENT

	TOTAL		MALE		FEMALE	
	Number	%	*Number*	%	*Number*	%
Total reporting....	10,497		7,378		3,119	
Total number of unemployed reporting.....	8,959	100.0	5,796	100.0	3,163	100.0
Depression.....	1,151	12.9	792	13.8	359	11.3
Reduction of force	3,205	35.8	2,326	40.2	879	27.8
Moved out of town.....	279	3.1	146	2.5	133	4.3
Shop closed.....	1,219	13.6	921	15.9	298	9.4
Hearing defect...	1,414	15.8	810	14.0	604	19.2
Illness, accident, mental deficiency.....	567	6.3	321	5.5	246	7.8
Strike.....	19	0.2	12	0.3	7	0.2
Work too hard...	146	1.6	85	1.3	61	1.9
Change of administration.....	82	0.9	51	0.9	31	1.0
Trouble with boss or foreman....	28	0.3	22	0.4	6	0.2
Work seasonal...	161	1.8	98	1.8	63	2.0
Now financially independent...	169	1.9	143	2.5	26	0.8
Needed at home..	437	4.9	23	0.4	414	13.1
Attending school.	65	0.7	35	0.2	30	0.9
Better job.....	1	0.0	1	0.0	0	0.0
Transferred.....	2	0.0	1	0.0	1	0.0
Difficulties reg. compensation..	6	0.1	5	0.1	1	0.0
Miscellaneous....	8	0.1	4	0.1	4	0.1
Unreported.....	124		77		47	

SPECIAL FEATURES OF EMPLOYMENT STATUS

1. Regularity of Work During Present or Most Recent Employment.—Table III shows that of those who responded regarding the regularity of their work, the largest per cent for both sexes answered "Permanent full time." The per cents were 59.8 for men and 60.6 for women.

For both sexes the second largest response indicated permanent part-time work. The respective percentages were 16.3 and 15.6. "Temporary part time" rated third, with "Temporary full time" following closely for men but in fifth

TABLE III

REGULARITY OF WORK DURING PRESENT OR MOST RECENT EMPLOYMENT

	TOTAL		MALE		FEMALE	
	Number	%	*Number*	%	*Number*	%
Total reporting....	19,529	100.0	13,224	100.0	6,305	100.0
Permanent						
Full time.....	11,734	60.0	7,914	59.8	3,820	60.6
Part time.....	3,118	16.0	2,133	16.3	985	15.6
Seasonal						
Full time.....	1,115	5.7	739	5.5	376	6.0
Part time.....	825	4.2	554	4.2	271	4.3
Temporary.....						
Full time.....	1,144	5.9	795	6.0	349	5.5
Part time.....	1,593	8.2	1,089	8.2	504	8.0
Unreported.....	51		27		24	

place for women. "Seasonal full time" ranked fourth for women, but for men it was fifth, and for both sexes "Seasonal part time" was sixth.

Table IV brings out the fact that for 68.4% of the men and 59.3% of the women, the employment just previous to the present or most recent position was continuous, and that only 14.2% and 12.5% respectively, did not hold a continuous position at that time, if they had any previous employment experience at all. These facts, combined with the statements already indicated regarding Table III, suggest that

TABLE IV

CONTINUITY OF EMPLOYMENT IN POSITION JUST PREVIOUS TO PRESENT OR MOST RECENT POSITION

	TOTAL		MALE		FEMALE	
	Number	%	*Number*	%	*Number*	%
Total reporting....	18,641	100.0	12,696	100.0	5,945	100.0
No previous experience.....	3,879	20.8	2,205	17.4	1,674	28.2
Work						
Continuous....	12,209	65.5	8,684	68.4	3,325	59.3
Not continuous	2,553	13.7	1,807	14.2	746	12.5
Unreported.....	939		555		384	

TABLE V

LENGTH OF TIME IN PRESENT OR MOST RECENT POSITION

	TOTAL		MALE		FEMALE	
	Number	%	*Number*	%	*Number*	%
Total reporting....	19,532	100.0	13,224	100.0	6,308	100.0
Less than 1 year..	4,398	22.5	2,924	22.1	1,474	23.4
1 to 2 years.....	1,739	8.9	1,051	7.9	688	10.9
2 to 3 years.....	1,361	6.9	845	6.4	516	8.2
More than 3 years	12,034	61.7	8,404	63.6	3,630	57.5
Unreported.....	48		27		21	

the deaf and hard of hearing have had fairly continuous employment.

2. Length of Time in Present or Most Recent Position.—From Table V it may be seen that the largest percentages of both men and women had been in the present or most recent positions for more than three years. The percents were 63.6 and 57.5 respectively.

Table VI indicates that 56.2% of the men had held their positions just previous to the present or most recent position for more than three years. Only 7.4% of the women had held positions for that length of time, although 40.2% had been employed from two to three years. However, it may be seen from the table that 17.3% of the men and 28.1% of the women had had no previous position. This fact

TABLE VI

LENGTH OF TIME IN POSITION JUST PREVIOUS TO PRESENT OR MOST RECENT POSITION

	TOTAL		MALE		FEMALE	
	Number	%	*Number*	%	*Number*	%
Total reporting....	18,681	100.0	12,730	100.0	5,951	100.0
No previous position.....	3,875	20.7	2,201	17.3	1,674	28.1
Less than 1 year..	2,089	11.1	1,269	10.0	820	13.8
1 to 2 years.....	1,878	10.1	1,252	9.8	626	10.5
2 to 3 years.....	1,300	7.0	859	6.7	441	40.2
More than 3 years	9,539	51.1	7,149	56.2	2,390	7.4
Unreported.....	899		521		378	

must be taken into consideration in interpreting the table. On the whole one may say that deaf and hard-of-hearing persons have not only had fairly continuous positions but have been fairly stable in holding the same positions for some length of time.

TABLE VII

CLASS OF EMPLOYER

	TOTAL		MALE		FEMALE	
	Number	%	*Number*	%	*Number*	%
Total reporting....	19,580	100.0	13,251	100.0	6,329	100.0
Private industry..	16,642	85.0	11,258	85.0	5,384	85.1
Emergency relief projects.....	1,110	5.6	1,002	7.6	108	1.7
Academic teachers, miscellaneous workers in residential schools for the deaf.....	592	3.0	279	2.1	313	4.9
Vocational instructors in residential schools for the deaf....	119	0.6	91	0.7	28	0.4
U. S. Government	206	1.1	151	1.1	55	0.9
City, county, or state government.....	799	4.1	451	3.4	348	5.5
Lip-reading in public schools.	112	0.6	19	0.1	93	1.5
Unreported.....	0		0		0	

3. Class of Employer.—According to Table VII, the most common employer of the deaf or hard of hearing was in private industry. The percentages for the sexes were identical, 85.0.

Next in order for the men, but very much lower in frequency, was the Emergency Relief Administration, which provided employment for 7.6% of the group. However, for only 1.7% of the women was such employment available. Apparently the vast relief projects sponsored by the Federal Government have done little for the deaf woman worker.

EMPLOYMENT STATUS CORRELATED WITH SPECIFIC FACTORS

1. Extent of Following Occupational Training.—This survey was entered into for the purpose of determining the types of occupations for which deaf and hard-of-hearing young people could be successfully trained. In connection with this it will be interesting to note Table VIII which shows the relation of the present employment status to extent of following occupational training.

Of the 1,858 who followed their training altogether, 65.1% were employed at the time of the survey. However, of the 2,901 men who did not follow their trade training at all, 60.7% were employed.

The results for women showed that of 1,200 who followed their training altogether, 54.8% were employed. Of the 888 who did not follow their training at all, 48.4% were employed.

The preceding figures indicate that the person who was following the work for which he was trained had only slightly greater chance of employment than the person who was not following his training at all.

2. Place of Occupational Training.—Referring to Table IX, of the 5,473 men and 1,728 women who received their training in a school for the deaf, 62.4% and 51.8% respectively, were employed at the time of the survey. Of the 1,896 men and 1,978 women who were trained in a public high or occupational school, 58.3% and 50.9% respectively were employed. Of the 5,757 men and 2,548 women who had no occupational training, 49.2% and 47.3% respectively were employed.

Although the percentages of employment were highest for those who attended schools for the deaf, and lowest for those who had no occupational training, they were too close to draw definite conclusions.

3. Grade of School Work Completed.—According to Table X, of the 1,447 men who attended college 68.8% were employed at the time of the survey. Of the 4,558 men who attended high school, 58.9% were employed. Of the 7,060 who completed elementary school, 51.3% were then employed. Of the 99 who never attended school, 41.5% were employed.

TABLE VIII

RELATION OF EXTENT OF OCCUPATIONAL TRAINING FOLLOWED TO EMPLOYMENT STATUS

EMPLOYMENT STATUS	TOTALS		EXTENT OF FOLLOWING OCCUPATIONAL TRAINING										UNREPORTED	
			Male					*Female*						
	Male	*Female*	No trade training	Followed altogether	To large extent	To small extent	Not at all	No trade training	Followed altogether	To large extent	To small extent	Not at all	*Male*	*Female*
			NUMBER DISTRIBUTION											
Total reporting.....	12,612	5,810	5,720	1,858	1,010	1,123	2,901	2,538	1,200	675	509	888	614	505
Now employed....	7,016	2,846	2,785	1,210	595	668	1,758	1,197	657	332	230	430	362	273
Now unemployed														
From 1 to 3years	3,441	1,674	1,730	454	267	274	716	755	313	173	172	261	150	125
Over 3 years.....	2,155	1,290	1,205	194	148	181	427	586	230	170	107	197	102	107
Unreported.....	25	14	9	4	1	2	7	9	2	0	1	0	2	2
			PER CENT DISTRIBUTION											
Total reporting.....			100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Now employed....			48.7	65.1	58.7	59.5	60.7	47.2	54.8	49.2	45.2	48.4		
Now unemployed														
From 1 to 3 years			30.2	24.4	26.6	24.4	24.7	29.7	26.1	25.6	33.8	29.4		
Over 3 years....			21.1	10.5	14.7	16.1	14.7	23.1	19.1	25.2	21.0	22.2		

TABLE IX

Relation of Place of Occupational Training to Employment Status

Employment Status	Totals		Place of Occupational Training						Unreported re. place	
			Male			*Female*				
	Male	*Female*	No Trade Training	In Public High or Trade School	In School for Deaf	No Trade Training	In Public High or Trade School	In School for Deaf	*Male*	*Female*
			Number distribution							
Total reporting.....	13,126	6,254	5,757	1,896	5,473	2,548	1,978	1,728	100	61
Now employed....	7,326	3,088	2,802	1,107	3,417	1,200	1,013	875	52	31
Unemployed										
From 1 to 3 years	3,567	1,783	1,745	519	1,303	760	551	472	24	16
Over 3 years....	2,233	1,383	1,210	270	753	588	414	381	24	14
Unreported.....	25	14	9	4	12	9	13	2		
			Per cent distribution							
Total reporting.....			100.0	100.0	100.0	100.0	100.0	100.0		
Now employed....			49.2	58.3	62.4	47.3	50.9	51.8		
Unemployed										
From 1 to 3 years			29.6	27.9	24.4	30.0	28.6	26.3		
Over 3 years....			21.2	13.8	13.2	22.7	20.5	21.9		

TABLE X

RELATION OF GRADE OF SCHOOL WORK COMPLETED TO EMPLOYMENT STATUS

EMPLOYMENT STATUS	TOTALS		GRADE OF SCHOOL WORK COMPLETED								UNREPORTED	
			Male				*Female*					
	Male	*Female*	Never Attended School	Elementary	High School	College	Never Attended School	Elementary	High School	College	*Male*	*Female*
			NUMBER DISTRIBUTION									
Total reporting.....	13,165	6,279	99	7,060	4,559	1,447	23	2,458	2,764	1,034	61	36
Now employed....	7,342	3,099	41	3,623	2,683	995	10	1,135	1,335	619	36	20
Now unemployed												
From 1 to 3 years	3,573	1,789	27	2,056	1,206	284	6	744	816	223	18	10
Over 3 years....	2,250	1,391	31	1,381	670	168	7	579	613	192	7	6
Unreported.....	25	14	1	12	9	3	0	6	5	3		
			PER CENT DISTRIBUTION									
Total reporting.....			100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Now employed....			41.5	51.3	58.9	68.8	43.4	46.2	48.3	59.9		
Now unemployed												
From 1 to 3 years			27.2	29.1	26.5	19.6	26.2	30.2	29.6	21.6		
Over 3 years....			31.3	19.6	14.6	11.6	30.4	23.6	22.1	18.5		

The percentages showed increased amount of employment according to education. The same was true for women. It is to be expected that the better educated person had greater ability to begin with. This would naturally place him in the favored group.

4. Earnings.—Table XI presents data regarding the relationship of earnings to employment status. The figures are such that no conclusions can be drawn on the subject since at each extreme of the earning scale we find more than 50% employed.

5. Employees' Self-Rating.—According to Table XII, which summarizes the responses regarding personal opinion of one's own success, the largest percentages of both men and women were succeeding fairly well. Those who said they were succeeding very well were a close second in both cases. Failure was admitted by the smallest percentages by both sexes. When the employers were questioned on the success of their deaf employees, they gave approximately the same reply, as will be shown in a later section of this report.

6. Means of Communication and Age of Onset of Deafness.—Table XIII indicates that of the 1,367 men who used signs, gestures, and the manual alphabet, 65.2% were employed. Of the 3,902 who used writing, 57.3% were employed. Of the 7,777 who used spoken language, 52.7% were then employed.

According to actual numbers 4,101 men, then employed, used spoken language; 2,286, writing; and 887, signs and the manual alphabet. However, the table shows that there was a somewhat higher per cent of employment for those who used the last-named method. The situation is similar for women.

The means of communication is usually influenced by the age of onset of deafness. If the onset occurs late in life, the handicapped person retains the ability to use spoken language. If the onset occurs early in life, writing or gestures and the manual alphabet are the more common means. Therefore, we should expect to find that the person who becomes deaf or hard of hearing late in life does not adjust

TABLE XI

Relation of Earnings per Week to Employment Status

Employment status	Totals		Earnings per week												Unreported	
			Male						Female							
	Male	Female	Less than $10	$10 to $19	$20 to $29	$30 to $39	$40 to $49	$50 or more	Less than $10	$10 to $19	$20 to $29	$30 to $39	$40 to $49	$50 or more	Male	Female
			Number distribution													
Total reporting	12,981	6,182	1,981	4,074	3,353	1,814	831	928	1,805	2,701	1,084	325	158	109	245	133
Now employed	7,193	3,037	1,051	2,629	1,808	856	345	504	831	1,370	531	159	83	63	185	82
Now unemployed																
From 1 to 3 yrs.	3,568	1,791	657	989	900	538	262	222	576	772	297	83	38	25	23	8
Over 3 yrs.	2,220	1,354	273	456	645	420	224	202	398	559	256	83	37	21	37	43
Unreported	25	14	5	4	8	4	0	1	1	2	1	1	0	1	3	8
			Per cent distribution													
Total reporting			100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Now employed			53.0	64.6	53.9	47.2	41.5	54.3	46.0	50.7	48.9	49.0	52.5	57.8		
Now unemployed																
From 1 to 3 yrs.			33.2	24.3	26.8	29.7	31.5	23.9	31.9	28.6	27.4	25.5	24.1	22.9		
Over 3 yrs.			13.8	11.1	19.3	23.1	27.0	21.8	22.1	20.7	23.7	25.5	23.4	19.3		

TABLE XII

RELATION OF EMPLOYEE'S SELF-RATING TO EMPLOYMENT STATUS

EMPLOYMENT STATUS	TOTALS		EMPLOYEE'S SELF-RATING								UNREPORTED	
			Male				*Female*					
	Male	*Female*	Succeeding Very Well	Succeeding Fairly Well	Getting by	Failing	Succeeding Very Well	Succeeding Fairly Well	Getting by	Failing	*Male*	*Female*
			NUMBER DISTRIBUTION									
Total reporting.....	13,202	6,291	7,268	3,568	1,829	492	3,814	1,592	731	154	24	28
Now employed...	7,367	3,115	4,035	2,049	1,049	189	1,917	807	348	43	11	4
Now unemployed												
From 1 to 3 years	3,588	1,795	1,979	921	510	178	1,062	458	211	64	3	4
Over 3 years....	2,247	1,381	1,254	598	270	125	835	327	172	47	10	16
Unreported.....	25	10	15	6	3	1	4	5	1	0	0	
			PER CENT DISTRIBUTION									
Total reporting.....			100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Now employed....			55.5	57.4	57.4	38.4	50.3	50.7	47.6	27.9		
Now unemployed												
From 1 to 3 years			27.2	25.8	27.9	36.2	27.8	28.8	28.9	41.6		
Over 3 years....			17.3	16.8	14.7	25.4	21.9	20.5	23.5	30.5		

TABLE XIII

RELATION OF MEANS OF COMMUNICATION OF EMPLOYEE TO EMPLOYMENT STATUS

EMPLOYMENT STATUS	TOTALS		MEANS OF COMMUNICATION						UNREPORTED RE. MEANS	
			Male			*Female*				
	Male	*Female*	Spoken Language	Signs, Gestures, M.A.[1]	Writing	Spoken Language	Signs, Gestures, M.A.	Writing	*Male*	*Female*
			NUMBER DISTRIBUTION							
Total reporting.....	13,046	6,242	7,777	1,367	3,902	4,614	490	1,138	180	73
Now employed....	7,274	3,077	4,101	887	2,286	2,276	282	519	104	42
Now unemployed										
From 1 to 3 years	3,539	1,778	2,291	290	958	1,342	105	331	52	21
Over 3 years....	2,233	1,387	1,385	190	658	996	103	288	24	10
Unreported.....	24	13	14	2	8	12	0	1		
			PER CENT DISTRIBUTION							
Total reporting.....			100.0	100.0	100.0	100.0	100.0	100.0		
Now employed....			52.7	65.2	57.3	48.3	58.2	46.4		
Now unemployed										
From 1 to 3 years			29.4	21.2	25.5	29.1	21.0	28.3		
Over 3 years....			17.9	13.6	17.2	22.6	20.8	25.3		

[1] M.A.—Manual Alphabet.

TABLE XIV

Relation of Age of Onset of Deafness to Employment Status

Employment status	Totals		Age of onset of deafness								Unreported	
			Male				*Female*					
	Male	*Female*	Infancy	Childhood	Adolescence	Adulthood	Infancy	Childhood	Adolescence	Adulthood	*Male*	*Female*
			Number distribution									
Total reporting	13,195	6,299	3,531	4,222	1,028	4,414	1,432	1,767	914	2,186	31	16
Now employed	7,357	3,104	2,124	2,516	577	2,140	744	854	474	1,032	21	15
Now unemployed												
From 1 to 3 years	3,588	1,798	877	1,086	301	1,324	399	526	266	607	3	1
Over 3 years	2,250	1,397	530	620	150	950	289	387	174	547	7	0
Unreported	25	14	8	6	2	9	1	3	2	8		
			Per cent distribution									
Total reporting			100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Now employed			60.2	59.6	56.3	48.5	52.0	48.4	52.0	47.2		
Now unemployed												
From 1 to 3 years			24.8	25.7	29.2	30.0	27.8	29.8	29.0	27.8		
Over 3 years			15.0	14.7	14.5	21.5	20.2	21.8	19.0	25.0		

TABLE XV

Relation of Age to Employment Status

Employment status	Totals		Age															Unreported	
			Male							Female									
	Male	Female	16–19	20–29	30–39	40–49	50–59	60–69	70+	16–19	20–29	30–39	40–49	50–59	60–69	70+		Male	Female
Number Distribution																			
Total reporting	13,203	6,268	159	2,409	2,854	2,848	2,452	2,293	181	146	1,498	1,492	1,453	1,103	548	28		24	47
Now employed	7,365	3,083	79	1,293	1,807	1,777	1,323	1,006	80	70	787	755	724	489	247	11		14	37
Now unemployed																			
From 1 to 3 yrs.	3,585	1,790	70	822	643	683	652	664	44	69	519	392	382	302	121	5		6	7
Over 3 yrs.	2,253	1,395	10	294	404	388	477	623	57	7	192	345	347	312	180	12		4	2
Unreported	24	14	1	5	3	5	7	3	0	0	2	2	3	6	1	0		0	1
Per Cent Distribution																			
Total reporting			100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0			
Now employed			49.7	53.7	63.3	62.4	54.0	43.9	44.2	47.3	52.5	50.6	49.8	44.3	45.1	39.3			
Now unemployed																			
From 1 to 3 yrs.			44.0	34.1	22.5	24.0	26.6	29.0	24.3	47.0	34.6	26.3	26.3	27.4	22.7	17.9			
Over 3 yrs.			6.3	12.2	14.2	13.6	19.4	27.1	31.5	4.7	12.9	23.1	23.9	28.3	32.8	42.8			

himself so well as the person who acquires a defect of hearing in infancy or childhood.

Table XIV, giving the relation of age of onset of deafness to employment status may throw some light on this subject.

Of the 3,531 men who became deaf in infancy, 60.2% were then employed. Of the 4,222 who became deaf in childhood, 59.6% were then employed. Of the 1,028 who became deaf in adolescence, 56.3% were then employed; of the 4,414 who became deaf in adulthood, 48.5% were then employed.

These figures seem to bear out the conclusion that the person who becomes deaf early in life appears to be less handicapped from the standpoint of employment than the person who becomes deaf or hard of hearing later in life.

7. *Age.*—For the normal person the years between 35 and 45 are considered the most active with respect to employment. Table XV indicates that the deaf or hard-of-hearing person does not vary from the normal. Of the 2,854 men who were between the ages 30 and 39, a total of 63.3% were employed at the time of the survey. Of the 2,848 men who were between the ages 40 and 49, a total of 62.4% were employed at the time of the survey. Of the 1,498 women between 20 and 29, a total of 52.5% were employed. Of the 1,492 women between 30 and 39, a total of 50.6% were then employed. These were the highest percentages for both sexes.

The lowest percentages for both sexes were for 60 years of age or more. This is not peculiar to the deaf but is true of all workers.

The foregoing discussion prepares the way for a more direct study of the persons who are now employed. This will be undertaken in a later section of this report under the title of "Present Earnings," and which will appear in the ANNALS for May.

The Status of the Deaf in Denmark

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THE ENTIRE population of Denmark is less than four millions, all of the Scandinavian race, except a few thousand Jews.

The number of the deaf is not high, about 60 out of each 100,000 hearing, with a decreasing tendency.

Three state schools, one in Fredericia, Jutland, one in Nyborg, Funnen, and one in Copenhagen, provide for the instruction of the deaf children. The school in Fredericia is set aside for the congenitally deaf, who are divided into three separate sections in the school, A, B and C—about 140-150 altogether. It is a combination of day and residential. The school in Nyborg is for the semi-deaf and semi-mute, about 100 pupils, who all live with foster parents in the town. The Nyborg school uses hearing apparatus with individual earphones in the two upper classes, and it hopes soon to extend this useful aid to other classes as a high percentage of its pupils possesses considerable remnants of hearing.

The school in Copenhagen is residential, with about 50 pupils. It serves as a preparatory school for all little deaf children of the country where those children who will eventually go to the Nyborg school remain for one year and where the congenitally deaf pupils remain two years. It has, besides, a kindergarten for deaf children, with 30 infants. The attendance in the kindergarten is optional, but the state provides for its support. The instruction for the deaf is compulsory from the ages of 7 to 16 years, nine years in all. But in case the pupils come too late to school, their instruction is *continued* after the ordinary leaving age, even up to the age of twenty or more. Denmark was the first country in the world to introduce free and compulsory education for deaf children through a royal ordinance in 1817.

The oral method prevails. It is exclusively applied at the Nyborg School and mostly at the Fredericia School,

where only the poorest part of the C-pupils are taught on a combined line. The preparatory school in Copenhagen uses a combined method for the beginners, but the fundamental part of the instruction is supposed to be oral.

There are two private day-schools for deaf in Copenhagen, one for the congenitally deaf with 35 pupils, and one for the partially deaf with about 20 pupils. Both use only oral instruction.

The schools for the deaf do not give their pupils a real vocational training in handicrafts. Boys are taught sloyd, wood and iron work, some gardening and some tailoring. Girls are taught domestic science work, sewing and knitting on machines.

For the adult girls, out of school, there is an industrial "home" in Copenhagen where they can learn professional sewing, ironing and domestic work. It has room for 60 alumni. The first two years are training years, after which many of them remain as paid workers in the home. For old and disabled women there is a home connected with this industrial place which provides room for 25 to 30 deaf women. The deaf-blind residents amongst them are occupied by weaving and knitting.

Near Nyborg is located an asylum for disabled or old men with room for about 35. Here live about 20 such men at present, occupied by gardening and farm work; some of them are blind and mentally weak.

All blind persons in Denmark have the right to obtain a state pension for life. Though it is modest—800 crowns annually—it is a blessing to most of them. All persons 65 years or above have the right to an old-age pension, the size of which varies in accordance with age and other circumstances.

The great majority of the deaf are able to earn their own living. The handicraft workers are generally economically fairly well situated. As a rule young deaf girls, without difficulty, find situations either at house work or in sewing shops. In most cases the Danish deaf marry other deaf persons, though there is a considerable percentage of the partially deaf who marry hearing persons.

Young men can usually easily find positions as farm hands, but are not well paid.

It is now more difficult than formerly to find apprenticeships for young artisans, but the situation is not desperate.

The teachers of the deaf are considerably better paid and have fewer weekly lessons than teachers in the elementary schools. At the present moment there is a surplus of unemployed teachers in most European countries, Denmark included. When a position is advertised as vacant in the "official journal," as many as up to 50 to 80 or even more apply for the post, often highly trained teachers even with high university degrees. Consequently the schools can select well qualified assistant teachers, but it is only exceptional that they previously had acquired a special education for the teaching of the deaf. Most of them get that training after their appointment in our special schools. Personally, I believe that a teacher should work in our schools for eight to ten years before being really fully trained for our branch of special work, or even more. Who has fully finished his or her professional education? *I* at least not. There are about the same number of women as men teachers in our schools, where the instruction is given on co-educational lines.

The school year in the elementary schools in Denmark is fixed at 240 working days, whilst the schools for the deaf have about 236 days. The summer vacation begins on July 1 and extends over six weeks, plus two days for travel to and from home.

In October there is a four-day break, sometimes a bit scornfully referred to as the "potato-holiday" or the "stove-holiday"—the heating of school premises formerly waiting till then, even if it was cold before. The Christmas holiday lasts nineteen to twenty days, and the Easter holiday includes eleven days. Again at Whitsuntide there is a little holiday of five days. There are also a few additional odd free days.

The state pays the traveling costs for all the deaf pupils three times annually—summer, Christmas and Whitsuntide.

The resuming of work about the middle of August makes it possible for American colleagues to see our Danish schools

in session, and they are sure to be received as most welcome guests in this country, where so many of the inhabitants have near and dear relatives who are Americans.

As the overwhelming majority of the population adheres to the Lutheran confession, which is state supported, to us it seems quite natural for the state to appoint special clergymen for the deaf. There are three such clergymen and one ordained assistant, and the country is for this purpose divided into three districts. Their services are generally well attended by the deaf. The services are held in the ordinary churches in the various towns which through the disposal of the authorities are available for such services. The three pastors are well paid.

The adult deaf have many kinds of associations and unions, mostly for the cultivation of social intercourse or the furtherance of sports and games, special lectures, etc. Hitherto the deaf as a class have not joined up with any particular political party, but lately a group has been editing a little monthly, *The Deaf Socialist,* which sometimes is aggressive in its treatment of deaf comrades of other views.

As a whole the deaf form an orderly, industrious and law-abiding group of people not too sharply isolated from other citizens.

A Comparative Study of the Movements of the Breathing Muscles in Speech and Quiet Breathing of Deaf and Normal Subjects*

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ACKNOWLEDGMENTS

THE EXPERIMENTAL work of this paper was conducted at the Clarke School for the Deaf at Northampton, Massachusetts, during the school year of 1933-34. The writer takes this opportunity of expressing his sincere appreciation to Dr. C. V. Hudgins, member of the Research Department at Clarke School, for the valuable time and ready assistance that he lent in the capacity of director of this research at that school. The writer also wishes to express appreciation to Miss Annette Howes and Miss Mary Numbers, instructors at Clarke School, for their co-operation in managing the routine of providing subjects for the experimental groups. Miss Elizabeth M. Collins of the Smith College Day-School provided a large number of the normal subjects from among her pupils. Indebtedness is also acknowledged to Miss June Yale, instructor at Clarke School, for the assistance she gave in analyzing some of the statistical data. Finally the writer is obligated to the entire Normal Class of Clarke School for their co-operation in serving as subjects for this experiment.

INTRODUCTION

Anyone first listening to the speech of a deaf person is struck immediately by its peculiarity. Probably the first reaction of the listener is that it is hard to understand what the person is saying. He then tries to contrast that speech with the normal speech to which he has always been accustomed to listen. The next thing that he realizes is that the speech of the deaf person is very slow and labored; then

* A thesis submitted for the degree of Master of Science at Massachusetts State College, June 5, 1934.

that the person speaks in a breathy manner accompanied by excessive breathing movements. And lastly, he notices the peculiar monotony of the tone and the lack of accent and rhythm in the speech. It is the purpose of this study to investigate the extent of the abnormalities in the breathing co-ordinations by comparing the speech of the deaf with that of normal subjects and to attempt to explain why they exist and to suggest a means of avoiding them.

Since speech is a modified form of breathing, this problem has resolved itself into a study of the breathing movements of the deaf during speech. The kymograph, a device which records respiratory movements, offers the readiest means of making such a study. With this machine and suitable recording instruments it is possible to record accurately the muscular movements during speech. This method was the one employed for the present study.

The speech of the deaf has been judged abnormal. Any speech which is judged abnormal has been so judged on a basis of the extent in which it deviates from normal speech. In order to show various abnormalities in the speech of the deaf it is necessary to compare those points under discussion with the corresponding points in the speech of a normal person.

This problem grew out of a survey of the speech of the deaf which was made by Hudgins[1] in which deaf and normal subjects were required to speak phrases of definite length and the breathing movements of the two groups of subjects were compared. Hudgins found very definite abnormalities in the speech of the deaf when phrases of definite length were used. In the present study the subjects were required to repeat a prolonged passage of some fifty syllables in which the normal punctuation was the only guide to the phrasing. In contrast, therefore, to the Hudgins study in which single phrases were used, an entire paragraph is presented to the subjects which they are required to read having received no instructions as to phrase length. The kymographic records show very clearly how they handled the breathing (phrasing) in this paragraph. It is possible, there-

[1] Hudgins, C. V., A Comparative Study of the Speech Co-ordinations of Deaf and Normal Subjects, 1934.

fore, to compare not only the phrasing of the deaf subjects with that of the normal subjects but to compare also the phrasing of the various deaf groups when classified according to their degree of hearing loss.

The following points will be discussed in the order in which they are named:

(1) Normal speech co-ordinations.
(2) A review of literature.
(3) Apparatus.
(4) Method.
(5) Results.
(6) Discussion and conclusions.

Normal Speech Co-ordinations

In any treatise on speech it is essential to understand the speech movements involved and the muscular equipment that initiates those movements. A fact to bear in mind is that the normal speaker is able to hear the sounds that are produced by him which aids him in controlling the speech movements that follow. The deaf speaker is not so fortunate. Not being able to hear the sounds which he produces his cues are limited to those that he receives from the movements themselves. This is one of the main reasons why sounds that are produced by the two groups differ so strikingly.

The speech muscles may be divided into two fundamental groups, namely: (1) Thoracic muscles which consist of the internal and external intercostals that produce the syllable pulse, and (2) Abdominal muscles which include the rectus, lateral obliques and transverse muscles. These are opposed by the action of the diaphragm.[2] The intercostal muscles are arranged in pairs and work in opposition to each other. The internal intercostals slant downward and backward; when they contract the ribs are rotated downward, decreasing the volume of the chest cavity. These are muscles of expiration. The external intercostals slant diagonally forward; when they contract the ribs are rotated upward, enlarging the chest volume. These are muscles of inspiration.

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[2] Hudgins, C. V., *op. cit.*
Stetson, R. H., Speech Movements in Action, *American Laryngological Association*, 1933, Vol. lv, 29 (Reprint).

The second group in opposition is the abdominal-thoracic group. These muscles are much larger than the intercostals and play a very important part both in speech and respiration. The diaphragm is one of the largest muscles of the body and acts as the "floor" of the chest. As the diaphragm contracts, the "floor" is lowered and the chest cavity is enlarged. Air rushes into the lungs as a result of this enlargement. This action of the diaphragm is opposed by the abdominal muscles, the rectus, and the lateral obliques and transverse muscles. The contraction of these muscles constricts the abdomen and the viscera are forced upward against the diaphragm. This counter action decreases the chest cavity and the air is expelled from the lungs.

The basic movement of speech is the pulse which produces the syllable. This syllable movement is the result of action of the intercostal muscles. The position of these muscles and the direction of their fibers indicate that such a function is entirely possible. There has been controversy over which of these two main muscle groups performed this function but recent tests point to the intercostals. Kymographic records show that these muscles are capable of making a rapid series of syllable pulses at rates of eight to ten per second.[3] The movements of the abdominal-thoracic group are incapable of producing pulses at rates exceeding three to four per second. At rates of syllable utterance not exceeding one to three per second, the intercostals and the abdominal muscles work in unison. The abdominal muscles contract and relax with each syllable but at rates higher than this they become fixated and the intercostals carry on the syllable function alone. The abdominal muscles still aid in that they provide a slow moving posteral support for the chest muscles. Syllables rarely occur alone. In normal speech they occur in breath groups or phrases. This grouping of syllables into phrases is one of the functions of the thoracic-abdominal muscles or the muscles of expiration; this is the result of a unified movement of these muscles. This muscle group is also important in that it subdivides the phrase into rhythmic feet.

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[3] Hudgins, C. V., *op. cit.*

A Review of Previous Work That Bears on the Subject Under Discussion

The following is a brief résumé of a report by Erika Kneisner[4] of Central Institute for the Deaf, at St. Louis, Missouri. The objects of the observations made by Miss Kneisner were intended to demonstrate the difference between the breathing movements of the deaf children and hearing children, and to show the importance of breathing exercises in relation to breathing movements. This investigation used the kymographic method. The movements of costal and abdominal breathing were recorded simultaneously with nasal respiration. Records were made of (1) normal breathing without speech; (2) deep breathing without speech; (3) breathing while counting, and (4) breathing while reciting a poem. A summary of the results of this investigation is as follows: It is impossible for the deaf to exhale slowly and evenly. Exhalation takes place in staccato fashion; especially the abdominal movements are uncontrolled, and the costal movements are often exaggerated, especially during expansion. The number of breaths drawn in one minute are not always identical in costal and abdominal breathing, which shows how little co-ordination is present in the breathing musculature.

Miss Helen Griffith,[5] in 1929, made a study of prose rhythm based upon kymographic records. For this she used normal subjects. A discussion of the points that bear upon the present problem follows: The placing of pause is not determined by the necessity for taking breath; for breathing is freely adapted to the logical and rhythmical demands of the passage. The average number of syllables per phrase is 9.68 syllables, with a range of from 1 to 34 syllables. The average time for the phrase is 2.27 seconds. This compares very favorably with the findings of the present study in regard to the normal subjects.

The most important study which bears upon the present problem was that conducted by Hudgins,[6] 1934. He used

[4] *Oralism and Auralism*, Vol. 2, 1932.
[5] Griffith, Helen, Psychological Monographs, 1929, Vol. xxxix, Whole No. 179.
[6] Hudgins, C. V., *op. cit.*

the kymographic method of recording the movements of the speech muscles during the process of speaking. Twenty-five normal subjects and sixty-two deaf subjects were used in the study. They were required to speak four phrases of nine, seven, five and four syllables in length. While these phrases were being repeated records were taken of (1) the movements of the muscles of the abdomen; (2) movements of the chest wall; (3) syllable pulses from the chest muscles; (4) the air pressure just outside the mouth during the phrase. The deaf children were divided by audiometric tests into three groups, namely, the totally deaf, the semi-deaf and those only slightly deaf. The results obtained from these groups were compared with those from a group of normal persons. A summary of his conclusions is as follows: The degree of abnormality found in the three divisions of the deaf is highly correlated with the degree of deafness. These abnormalities may be summarized as follows: (1) extremely slow and labored speech, usually accompanied by high chest pressure and uttered with an excess amount of breath; (2) prolonged vowels with consequent distortions; (3) abnormalities of rhythm; (4) excessive nasality of both vowels and consonants; and (5) improper function of consonants and the consequent addition of extra syllables at points between abutting consonants. The rate of breath flow remains about the same for all the groups. The single exception is that of the group of totally deaf in pronouncing the nine-syllable phrase in which their rate of breath flow is somewhat larger.

Apparatus

The pneumatic method of recording was used throughout the entire experiment. A motor-driven, variable-speed kymograph, carrying a record 26 by six inches, was used.

A wooden frame steadied the subjects while their speech was recorded. The back upright of the frame was equipped with two adjustable bearing points which were arranged to press against the subject at two points, the thoracic and the lumbar regions of the spine. When the subject was placed in position and the supports adjusted, the body was held firmly so as to prevent any backward movement. Another up-

right in front of the subject consisted of a half-inch pipe which held the tambours with bosses independently of the subject. The tambours could be adjusted to any position so that contact could be made with any portion of the subject's trunk, and the movements of that area recorded.

The recording tambours were applied to the body wall at two places; (1) the lower sternum, and (2) the epigastric or upper abdominal region. These tambours were thistle tubes of the ordinary size, the open ends of which were covered with a thin rubber dam, tightly stretched and securely fastened. Cork bosses 3 cms. in length and 2 cms. in diameter were glued to the center of these diaphragms. When the subject was in position, the tambours were adjusted to the body area which was to be explored. The bosses were placed against the body area until the rubber diaphragms were forced into the cup of the thistle tube about half the length of the bosses. Thus, as the body wall moved in and out with the speech movements, the bosses were moved in and out displacing the column of air within the closed recording system. The pressure changes within the recording system were transmitted to the smoked records by means of pneumodeiks[7] that were equipped with a delicate phosphor-bronze diaphragm which is permanent and does not have to be replaced like the rubber diaphragm of the Marey tambour. The constancy of the diaphragm makes it possible to compare accurately tracings of pressure made from day to day over a long period of time.

In addition to tracings of the breathing muscles, tracings were also made of the air pressure changes just outside the mouth. The subject spoke into a rubber mask cut to fit the contours of the area around the mouth and connected to the recording apparatus by means of a rubber tube. The rubber mask was ventilated, allowing the subject to breathe through the mouth if he desired to do so. (The nose was not covered.) With this mask, records in the pressure changes in the air outside the mouth were recorded.

Tracings of the breathing movements were taken of each

[7] Hudgins, C. V. and Stetson, R. H., A Unit for Kymograph Recording, *Science*, 1932, Vol. lxxvi, 59-60.

subject as he stood and breathed naturally. Time for these records was recorded in seconds and fifths of seconds by the Jacquet chronograph.

Method

The test material used was a simple paragraph consisting of fifty syllables. From five to six repetitions of the paragraph were required of each subject. The words ranged from one to two syllables in length and the language was simple enough so that it was readily understood by even the youngest subject. The paragraph read as follows:

> The cook made a cake in the kitchen. The cake was made for Mary. It was her birthday and she was ten years old. There were ten candles on the cake. All the children in the class were asked to come to the party.

The paragraph was typed upon a card and placed before the subject. As he was being placed in the frame and the tambours arranged, he was asked to read the paragraph aloud once. This was done in order to assure the subject that he was perfectly capable of handling all the words contained therein. He stood in such a position that he was not able to see the record as the movements of his speech and quiet breathing were being recorded. This precaution was taken in order to make sure that the subject would not become conscious that his speech was being studied. He was merely told that he was to read the paragraph naturally; just as he would ordinarily. In making the record of his quiet breathing he was told to stand quietly and say nothing. Precaution was again taken not to allow him to look at the drum as tracings of his quiet breathing were being recorded. The result was that accurate recordings were secured of muscular movements in both breathing in speech and quiet breathing.

From two to three records or repetitions of the paragraph were made upon every kymographic sheet. A record consisted of tracings of the breathing movements of the lower sternum, the epigastric region, and the air outside the mouth. Time was also recorded in fifths of seconds. One of the kymographic sheets was devoted to recording the movements of the lower sternum and the epigastric region in quiet breathing. These records were timed in seconds instead of fifths.

The deaf subjects were all pupils of the Clarke School for the Deaf, Northampton, Massachusetts. All the pupils in the upper school were used and two classes in the intermediate department. Fifty-eight deaf subjects were used in all; twenty-seven boys and thirty-one girls. Their ages ranged from eleven to twenty at the time the records were taken.

The deaf subjects were divided into groups A, B and C, according to their degree of deafness as determined by the 2A Audiometer. Group A consisted of fourteen hard-of-hearing pupils, four boys and ten girls, ranging in age from eleven to twenty years. The individuals who comprised this group had a hearing loss of not more than forty-five decibels. Group B was composed of a group of eleven pupils, six girls and five boys, ranging in age from twelve to nineteen years. These had a hearing loss of not more than seventy decibels. Group C was the largest group. It consisted of thirty-three pupils, nineteen boys and fourteen girls, ranging in age from fourteen to twenty years. They all had a hearing loss of seventy decibels or over. These subjects had all been in schools for the deaf for as long as two years and the greatest majority of them had attended such schools since the age of five or six. They had been taught speech and lip-reading along with their other studies and were not allowed to use any other form of communication.

The normal group consisted of fifteen children and adults, ages ranging from nine to twenty-five years; five males and ten females. The group consisted of boys and girls from the Smith College Day School and the Normal Teachers Training Class at Clarke School for the Deaf. All of them were aware of the purpose of the experiment.

The records were measured for the average number of syllables per phrase; the time taken in speaking the phrase and paragraph; the amplitude of the phrasing movements of both the chest and abdominal tracings for speech and quiet breathing. The amplitude of these tracings, *i.e.*, the perpendicular distance between the point on the tracing when the phrase begins, when the lungs are inflated to the lowest point reached in the expiratory movement for that phrase, is taken as a relative measure of the amount of

breath expelled during the phrase. The amplitude was measured in millimeters. Since two phrasing movements were taken simultaneously, the mean amplitude of these two tracings were taken as the measure. The sum of these means for the paragraph was taken as a measure of the amount of breath used by the subject in speaking the paragraph. The phrase movements, time and amplitude, were treated separately for each phrase made by each subject. It is estimated that there were more than twenty-eight hundred phrases measured in all. Records were also measured for the average number of phrases per paragraph for each individual; the individuals were then classified according to their degree of hearing loss and the average number of phrases for the groups was computed. The average time in seconds was computed for the paragraph as read by the individual and for the group.

Records taken of quiet breathing were measured for the amplitude of the breathing curves and the rate was computed for the number of times per minute that the individual breathed. This rate times the amplitude of the breath curve furnished a relative measure of the amount of breath consumed by the subject in quiet breathing over a period of one minute. A similar computation was made of the amount of breath consumed by each individual in speech breathing over the same period of time. These figures furnish an accurate basis for comparison of the amount of breath consumed in quiet breathing with the amount consumed in speech. The individuals were then classified according to their degree of hearing loss and comparisons were made between these groups and with the normal group. The reliability of the differences between the groups were statistically determined and will be presented in tables.

[*To be continued*]

Extension of the Work of Perkins Institution

By GABRIEL FARRELL, B.S.

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THE DEAF-BLIND DEPARTMENT

IN ORDER TO use the long experience that Perkins Institution has built up in the education of the deaf-blind, which has been continuous since the admission of Laura Bridgman in 1837, and to make our present department of the broadest service, we have given much thought recently to the extension of the opportunities afforded by the Deaf-Blind Department of Perkins Institution. Many applications for the admission of doubly handicapped children have come to us but it is obvious that we cannot admit all who apply, for acceptance usually means responsibility for the child for the rest of his school life. While we may have to assume this responsibility for New England children, we do not feel that we can do this for children beyond this territory.

We are anxious, however, to help the parents of, and the authorities responsible for, children with this double handicap. To do this most effectively and to enable us to make our help as far reaching as possible, it seems advisable for us to make our primary effort the training of teachers for this special work. We understand there are a number of schools for the blind and for the deaf which have deaf-blind pupils, and that they are perplexed to know the best way in which to carry on their instruction, especially in the matter of speech. The teaching of speech is a phase of the work in which we are having a good deal of success.

Because of these facts, it has occurred to us that Perkins could render a valuable service if we offered opportunity for such teachers to come here for a period of time, say three months or one school term, to observe our methods. In order to make this possible for teachers now charged with the care of deaf-blind children, we are ready to send a well-trained teacher to carry on their work while they are at Perkins. It would be an exchange plan—our teacher would carry on the work in the school to which she is assigned, and the teacher coming here to observe would help in our Deaf-Blind De-

partment. The school would care for the salary and the transportation of its own teacher, while Perkins would do the same for the exchange teacher.

The teacher visiting here would have opportunity to observe how we begin speech instruction and how we carry on our work with the children of various ages in this department. It might be arranged for her to attend lectures of the Harvard Course. Miss Inis B. Hall, head of the Deaf-Blind Department, feels sure that in three months a teacher could learn enough to make the trip here worth while, and would return home with an enlarged knowledge of how to deal with these doubly handicapped children.

From time to time we will want to admit a limited number of deaf-blind children for residence in the school, and the intensive training that we can give. In order that this privilege may be widespread and afford opportunity for as many children as possible, we have decided that we will accept children from outside of New England for one year only, and on the condition that each child is accompanied by a teacher or a qualified attendant who will come with the child for the definite and pledged purpose of carrying on the child's education after returning from the year's residence at Perkins. We feel sure from our experience that one year can give a normal deaf-blind child a good start in speech, and provide a well-qualified teacher the special training needed to continue the education of the child at home.

These two policies will enable Perkins to help more children and serve more schools than the plan of accepting the limited number of deaf-blind children that we can accommodate for indefinite residence, and will also keep the responsibility for these children within their own states or communities.

Our department is now fully equipped to render this specialized service. Miss Hall, with several years of experience in schools for the deaf, and with three years of responsibility for our deaf-blind, is well qualified to lead this work. The special attendants of "Tad" Chapman and Leonard Dowdy, as well as the presence of these two deaf-blind boys, strengthen Miss Hall in her plans. Our department is

equipped with the Phipps Unit, an electrical apparatus whereby sound is conveyed through bone conduction, and which enables the most advanced form of teaching speech articulation. All instruction in the department is by the Tadoma method devised by Miss Sophia Alcorn, now at the School for the Deaf in Detroit.

The Story of the Deaf-Blind at Perkins

The story of the deaf-blind at Perkins has been most interestingly related by Miss Anna Gardner Fish, registrar of Perkins Institution, in a booklet published by the institution. In 1837 Laura Bridgman came to Perkins, and since her time, with the exception of seven years at different intervals, there have been deaf-blind pupils at Perkins, many of whose names stand as milestones on the way of progress that this form of education has made. From the mass of data that has been gathered in our reference library regarding the deaf-blind and from the histories of our pupils which have been most carefully kept, Miss Fish has picked out the facts and incidents that most effectively tell the story of the emergence of many minds from the dark silence. At this time when we are giving thought to the extension of our deaf-blind work it is of infinite value to have the story of the past so keenly chronicled. All in this field will be tremendously indebted to Miss Fish for her painstaking study and the interesting telling of this pioneer work within the walls of Perkins.

Experiments in the Academic Education of Adolescent Deaf Pupils—II

By LOUISE EBELING DEAN, B.A.

Northwestern University

[The following is a second report on an educational project—teaching deaf pupils to read. It confirms what the first report by Mrs. Dean had already suggested; that the reading difficulties of the deaf can be made to yield when the problems are approached from the side of teaching hearing children.—ROBERT H. GAULT, Department of Psychology, Northwestern University, Evanston, Ill.]

THIS WORK was begun in 1932-1933 with one deaf girl—"A"—and the methods and materials developed to suit her particular needs have been described in a previous report.[1]

In the fall of 1933 "A" was joined by "B" who, almost exactly two years older than "A," was nearly eighteen. She had about the same hearing loss as "A" and, until the preceding year, had had an equally conventional education. Both girls had attended the same school up to 1929 after which they had gone to different institutions. During the year that "A" had been working on this experimental program, "B" had studied at home.

In intelligence, as measured by a comprehensive battery of non-language tests administered by a trained tester, "B" rated as a superior adult while "A" approached, without quite reaching, the normal adult level. Observation of the reactions of the two girls to their general work throughout the year showed unquestionably that "B" was superior to "A" in perception of relationships, especially those of a spatial nature which could be perceived visually, but that "A" was superior in language, that is speech, lip-reading, sentence structure and ability to express thoughts in properly integrated words.

On the Gates Test, "B" showed an average reading age of nine and one-half years, a half year less than "A's," although she was slightly superior to "'A" in reading to notice details. Her reading of directions was very poor, barely reaching the third-grade level, but although she

[1] ANNALS, September, 1934 (Vol. lxxix, no. 4), pp. 292-305.

tested below fourth grade in reading to appreciate general significance, she had evidently read for pleasure books such as those by L. M. Alcott and had not only enjoyed them but had understood the main action of the stories and had grasped many of the details. She read very slowly and, where careful reading was required, quite inaccurately but she read for meaning, that is, for related action and continuity of story and this—with her ability to notice the descriptive words and phrases with which she was familiar —enabled her to read and apparently understand selections including a number of paragraphs or even chapters when she was unable to comprehend simple questions and directions which require for their interpretation perception of the exact relationship between words and phrases. Her vocabulary was about as limited as "A's" but she tended to use the dictionary to a greater extent. Furthermore, she had formed the habit of re-reading two or three times passages which she had difficulty in understanding, a practice which "A," who wanted to go through things quickly and get them done, had never used.

In arithmetic "B" had evidently studied computation in terms of fractions but she could not remember any of it beyond addition of like fractions. The percent sign looked familiar to her but she could neither tell what it meant nor could she do problems involving percentage. She, also, lacked understanding of fundamental arithmetic principles and relationships and although she seemed to learn processes more quickly than "A," she forgot them with equal rapidity. She knew the four fundamental processes but she was often slow in recalling combinations and tended to make careless mistakes.

It was difficult to determine the exact nature of her social science background. She appeared, like "A," to have had conventional work in American history and she gave evidence of having studied civics, but her knowledge of the map was very weak. She seemed to know almost nothing about either the geography or history of Europe; while terms such as A.D., B.C., and "middle ages" appeared quite

unfamiliar to her and "a long time ago" meant in the early days of this country.

When writing of simple facts concerning events or situations with which she was well acquainted, her written language was fairly good but as soon as she tried to express thoughts, feelings or relationships, her sentence structure was likely to suffer. She frequently became confused on tenses but could always correct errors of that type as soon as they were pointed out to her. She could in most cases identify nouns, verbs and personal pronouns and her knowledge of conjunctions indicated that she had, at some time, studied other parts of speech but she had evidently failed to understand their use and had retained little knowledge of them.

In art, however, she had interest, enthusiasm and at least practice in representative drawing. She wants to be a commercial artist and has probably done quite a bit of drawing and water-color work for her own amusement. She gave little evidence of having had much training or experience in design, perspective, color-mixture, or lettering but she combined colors with taste, had a good eye for proportion, and was quick to perceive spatial differences.

Partly because of the addition of this second pupil and partly because of changes in the time and place of instruction, it was possible during this year to undertake some project work and to provide for some supervised study. The girls remained in school from 9:00 until 4:30 with an hour out for lunch, and three hours of that time, on the average, were devoted to academic work; but, with the exception of some recreatory reading done at home during the second semester, there was no home work. Not all the time spent on academic work was supervised, however, for during the first semester the girls worked by themselves about three hours a week and in the second semester they had one study period a day in which they did exercises, outlines, or some other form of written work which could be carefuly checked.

Arithmetic

Since "A" had barely started addition of fractions and "B's" memory of arithmetic seemed to stop at that point,

both girls were started with Book IX of the *Washburn Individual Arithmetics* at the beginning of fraction computation. Explanations of general principles supplementing the expositions in the book were given the two girls jointly but individual difficulties were attacked separately although occasionally, if one girl progressed a little faster than the other, she was permitted to demonstrate and explain to her fellow pupil.

Addition of like fractions offered no trouble at all; reduction to lowest terms required little more than practice; and learning to change to a common denominator was accomplished with less difficulty than had been anticipated. Considerable emphasis was laid on the principles involved in the processes, and reactions noted later in the year indicated that at least some understanding of these had been achieved.

By the beginning of November, Book IX was finished; the tests on addition of fractions had been passed; and work had started on Book X—subtraction, multiplication and division of fractions. In subtraction "A" met her old stumbling block in the principle of borrowing but although she required some help and was given a review of borrowing in general, she recognized the principle early in the explanation and gave positive evidence of having profited by her previous year's work. Once borrowing was recalled, she progressed rapidly through subtraction and went on to multiplication. At this point both girls were given an explanation of cancelation, its nature, the reason why it is possible, its value, etc., but it is probable that its usefulness was the only thing which impressed them. In the later stages of multiplication of fractions two processes for somewhat similar problems were introduced and "A" found these very confusing. She would get one process memorized, go on to the next, forget the first, go back, forget the second, etc., showing that she lacked a real concept of the relationships involved and that she needed drill with concrete materials. "B's" situation, although not so obvious, was fundamentally the same. She had probably learned these processes before and the demonstrations in the book brought them back to her so that she was able to do the problems successfully but any variation of the type of problem or any questions

relating to principles revealed that she was automatically performing certain operations with very little understanding of their nature or meaning.

Both girls, therefore, were ready for project work of a concrete nature involving fraction computation, and such a project, previously planned, was introduced at this point. It consisted of enlarging outline maps by measuring distances on a small printed map, multiplying those measurements, and marking off the enlarged distances on the big map which was being made. It contributed to other types of educational development which will be described later, but in arithmetic it gave considerable practice in measurement—in multiplying whole numbers, mixed numbers, proper fractions, and improper fractions by either a whole or a mixed number, and in perceiving the relation between spatial proportion and arithmetic computation.

While the girls were working on this part of the map project, no additional work in arithmetic was given them. When the process of enlarging was finished, however, about the middle of February, they returned for a short time to the work in Book X. "B" took the multiplication of fractions test in the book and "A" was given a number of problems in addition, subtraction and multiplication of fractions to be worked out on the board. A little prompting was required but the instructor was agreeably surprised to find that they remembered quite well the processes they had learned some three months before. Both, however, needed more practice on multiplication of large mixed numbers (the work on the maps had involved only small ones) and they worked on this until the early part of March when, after a brief introduction to division of fractions, they started work on the next project.

The arithmetic in this project, also, consisted mostly of enlarging dimensions—plans of model houses and shops—but the enlargements made were greater and involved more work with mixed numbers and less with improper fractions thereby giving practice in a slightly different process. It also gave opportunity for demonstrating to the girls short cuts in computation which substituted a combination of

processes for multiplication of large, unwieldly, improper fractions. An improvement in accuracy of measurement and in perception of relationships in the work on this project over the work on the maps was, moreover, definitely noticeable, especially in the work of "A." At the time when the map project was undertaken, neither pupil could read a ruler in fractions of inches and in other respects both were incapable of doing work of the type which they later did on this village project.

Although no work was done on the *Washburn Arithmetics* after the project was begun, the girls did get some computation practice from another source. Since "A" had made it quite obvious that she liked to have grades on her papers, the social science, grammar and reading exercises were graded on a basis of 100 and throughout the year, when it was convenient, the girls had helped figure out their own grades. During the last month and a half, however, they were doing timed reading exercises—five exercises at a sitting with three questions per exercise to check comprehension. Each exercise was timed and the number of words in each recorded. Therefore the time and the number of words had to be averaged, the number of words read per second and per minute had to be computed, and the score, based on the proportion of questions correctly answered, had to be figured out. All this required a deal of arithmetic including a variety of processes and it proved excellent practice for both computation and selection of process.

Aside from this neither girl had any review in arithmetic until the last week in school when "B" did a review practice test and "A" took a practice test in fractions. "B," working in an unsupervised period with plenty of time and freedom to refer to demonstrations and explanations in the book, succeeded in doing all of her problems correctly. "A" worked under supervision and asked a few questions but both her work and her questions showed that, although she had forgotten details, she remembered the main operations involved in the various processes and retained some concept of the principles. Two days later both pupils were given the arithmetic sections in the *Modern School Achievement Tests.*

They knew that they were being timed and in their effort to work fast both, "B" especially, made careless mistakes in combinations. Their scores were:

	Computation		*Arithmetic Reasoning*	
Pupil	*Age*	*Grade*	*Age*	*Grade*
"A"	11– 1	5.3	9–11	4.3
"B"	10–10	5.0	12– 2	6.4

The arithmetic reasoning section required mainly ability to select and use the right process. "A" is without doubt weak in this, weaker in whole number problems (which she is supposed to have studied in other schools) than in those involving fractions, but the extent of "B's" superiority may be questioned. She does well on simple problems upon which she has apparently had considerable practice, but if the type of problem is changed or the numbers involved enlarged, she is quite at sea. She has no difficulty with a problem such as: If you pay fifteen cents for five pieces of candy, how much do you pay for one? but if given one such as: You read 150 words in 50 seconds; how many do you read in one? she has no idea how to attack it.

Present plans for next year include continuation of problems involving both arithmetic computation and reasoning in practical situations; introduction of decimals and percentage; and, if possible, motivated drill in whole number addition and multiplication combinations, in which both girls are slow. Special emphasis will be laid on decimals, for in spite of the fact that the girls use the point in computations of dollars and cents, their understanding of the decimal system is very weak. Although "A" uses several devices which serve her as crutches, she does not figure by tens at all. Indeed, when adding or multiplying by ten, she figures out the sum or product in the air or on paper. During the last year both girls have been given several demonstrations of how easy computation involving tens can be made as well as explanations of the meaning of each place in a number—digits, tens, hundreds, etc.—with the practice in figuring by tens and identifying designated places in numbers, but as yet their understanding of this is not fully established and extensive demonstrations using money for illustration are

planned for the coming year. This concrete work with money will also serve to introduce percentage and every effort will be made to emphasize fundamental principles and relationships.

Project and Art Work

All the project work done during this year contributed to some development in the field of art and likewise all the art work, with one exception, partook of a project nature. The exception was a drawing of a tree made on the fourth day of school.

The first undertaking was a problem in interior decoration involving measurement and sewing and consisted of making three pairs of curtains to brighten the classroom.

Once this was accomplished, the girls noticed a raffia glass holder and mat which had been placed in the room. "A" recalled the mats she had made in the preceding year and both decided they would enjoy learning to make the glass holders. Some measurement with rule and compass was required in preparing the cardboard strips for these but it was of such a simple nature that neither girl found it difficult. In spite of "A's" previous experience with raffia weaving, "B's" greater facility in handwork gave her an advantage so that her work was not only faster but neater. Both girls seemed to enjoy the work hugely, however, and would pick it up whenever they had a free moment. Furthermore, "A," working in her spare time at home, made a set of glass holders as a Christmas present for her brother. As soon as "B" finished her holder she started a mat and "A" seeing that the edge on this mat was to be different from that she had made the year before, decided to make one too.

The raffia weaving was finished by the end of October and at that time a collection of handmade Christmas cards and linoleum block prints was shown the girls and their interest in that type of work was aroused. "A" had previously remarked that she wanted to make a card again this year. However, since she had few ideas on the subject and lacked faith in her ability to draw, she experienced some difficulty in developing a composition. Introducing the project the instructor had given a short illustrated lecture on the dif-

ference between design and representation, the elements of design and the meaning of style. Probably influenced by art work shown at that time, "A" finally produced a design that was positively stylized. It was definitely original, developed with but few suggestions from the instructor, and possessed the advantage of being drawn largely with a ruler. But that required accuracy of measurement and exactness of proportion. All of this provided "A" with much-needed practice in using a ruler and in doing careful work. "B" on the other hand, evolved two compositions, both including figures, and as she could not decide which she preferred, she developed both to the point of working out the black and white. This gave her extra work in composition, and in connection with these drawings she was given some instruction on balance and other art principles. The design which she finally chose was a coach scene, illustrated in nature but highly simplified.

The lettering required on these cards proved to be the hardest part of the project. Both girls tended to be satisfied with crude, careless lettering and attempted to put it into the margins; so a handbook was procured, different types of lettering were shown, correct spacing was demonstrated, the function of margins was explained, and the requirement that the lettering fill the space set aside for it was emphasized. The actual mechanics of transferring the drawings to the linoleum blocks and cutting the blocks offered very little trouble although "B," never having used a tool before, required some practice before she began cutting. The two blocks were cut in different styles suitable to their subjects, "A's" being clear cut and "B's" being done in a wood block technique. Some errors were made, of course, but the blocks printed very well and the instructor judged the finished cards—the prints mounted on silver paper and then on heavy, green folders—to be quite creditable.

About a week before the Christmas cards were completed, the map project was begun. This was destined to aid development in arithmetic, social science, art, and perception of spatial relations. "A" enlarged a map of the United States, making her map twice the size of the original; while "B"

enlarged a map of Europe (including Asia Minor and the parts of Africa bordering the Mediterranean) one and one-half times. It would seem that "B" had much the harder task for not only was her map more complicated but she had to multiply every measurement by 3/2 whereas "A" could multiply by 2, but "B's" judgment of proportion, ability to copy, and control of her pencil were so much greater than "A's" that she found herself at no disadvantage.

Both girls were given the maps they were to enlarge and the sheets of bristol board upon which they were to make their copies and were asked to figure out how much larger than the original they could make their maps. Both required a great deal of help in this and without considerable assistance both proved incapable of drawing the large rectangles in which the maps were to be placed. For the first week their work was slow because of the trouble they had (in spite of repeated drill) in reading eighths, sixteenths, and even quarters of inches on their rulers. The next problem was to get them to measure each point from two directions. The latitude and longitude lines had been put in first and they were expected to allocate points in the contour lines by measuring their distance from both a latitude and a longitude line. For a while they tended to measure from one line only, with the result that their points would be out of place in one direction. "B's" accuracy of observation compensated for this to some extent and she was often able to place points fairly well without measuring, but after she realized she was making errors, she measured faithfully and her work progressed very well. "A" required considerable supervision until she had the contour of the United States nearly finished, when she suddenly showed capacity for accurate and independent work. Her drawing, also, which had been characterized by a heavy, wiggly line, improved markedly.

After the maps had been drawn, an atlas was provided and the girls lettered in the names of the states, counties, and a few important cities. Because this involved so much lettering, it was inadvisable to hold them to as high a standard as had been demanded on the Christmas card but they were required to make all the letters in each name the same

height and to give some consideration to spacing. Since "B" had shown a surprising ignorance of European countries, care was taken to see that she had a clear idea of the exact location of a country before she was permitted to letter its name on her map and in the map test given at the end of the year the fact that each girl knew best the part of the world which she had drawn indicated a definite geography gain from this work.

The final step in this project was painting the maps. Both pupils were given instructions in laying an even wash but they were left free in their choice of colors. ("B" produced a neater and better effect, but since the quality of their paints differed greatly it is hard to make any fair comparison of their work.) When finished, the maps were hung on the wall directly facing the girls' desks where they remained during the rest of the year for use in geographical reference.

The last and largest project of the year was undertaken immediately following the completion of the maps and is not yet finished. It consists of constructing a village, using bristol board as a material basis and following plans and instructions in the *Book of Knowledge*. At first it was motivated by the knowledge that it was to be included in the exhibit of the American Institute for the Deaf-Blind at a Century of Progress, but the interest which the girls have shown in it and their obvious pleasure in working on it indicate that it requires no extrinsic motivation.

About the middle of March both girls read the introduction to "Modeltown" in the *Book of Knowledge* and "B" promptly commenced working on a model of Shakespeare's birthplace (which gave an opportunity for explanation of Shakespeare's importance). A few days later "A" undertook to make a furniture shop. As soon as the birthplace was finished, "B" started a church of which she has completed half and shortly before the close of school "A" began work on a chapel.

The process of making these buildings includes enlarging the plans in the book two, four or six times according to whether the book diagrams are full, half or third scale; reading, understanding and carefully carrying out direc-

tions for cutting, folding and glueing; and exercising originality on decorating and finishing. In many cases where the instructions call for painting, strips of passe partout tape have been used and all the windows have been cut out (using a razor blade) and glazed with cellophane (which had not been invented when the *Book of Knowledge* was written). Therefore, the books have not been followed to the letter but a good deal of careful reading has been done and in the making of many parts the directions have to be carried out exactly. This not only gives practice in accuracy of reading but also impresses on the pupil the need for care.

The girls have already gained considerable experience in handling various media, tools and materials. They have learned to use triangles to get straight lines and right angles; they are experts at putting on tape and glueing bristol board; "A" has devised ingenious ways of replacing windows after they have fallen out; "B" has put on passe partout in imitation of the timbering on an English house and has cut it to form the woodwork of church windows; "A" has made a stucco finish by sprinkling sand into a paint-mucilage mixture, etc. They have had practice in using their hands for delicate manipulations ("A" has been especially in need of this) and they have had numerous opportunities to observe the foolishness of careless haste and the value of accuracy, as well as to exercise patience, persistence and initiative. Many valuable contributions of this project are still to come, however. A brief lecture on styles of architecture was given when the work was introduced but more attention can be profitably given to that phase; landscaping and city planning will enter in at a later stage; and there are a number of social science concepts which may be developed in connection with this undertaking.

[*To be continued*]

The Psychology of Language With Special Reference to the Deaf

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I. CONCEPT OF THE TERM "LANGUAGE"

TO TEACHERS of the deaf, the term "language" means the correct use of English, both spoken and written. In other words, the child's language ability is the degree to which he can express himself in good English. Thus we find books written by teachers of the deaf with titles such as: "Straight Language for the Deaf,"[1] "Language Stories and Drills,"[2] "Outline of Language Work for Deaf Children."[3] That is, "language" to them primarily concerns the use of such word-concepts and syntax as the child may have acquired, and does not to any extent concern the actual sensori-motor and associative processes involved in acquiring a vocabulary. This seems to be a perfectly logical and justifiable conception as the correct use of English is the aim of every teacher of the deaf, and at the same time is her hardest task.

To the psychologist, however, "language" is something more than grammatical forms and their usage. To him, language is the most striking means of distinguishing man from the lower animals. The sensori-motor and associative processes involved in developing language play an essential part in the mental development of the individual. Language for the psychologist has a social significance as well. Language becomes the substitute for earlier sensori-motor responses.

The child is provided by nature with an intricate speech mechanism but it must be developed, as only the potentialities for speech are provided in this motor mechanism.

[1] Fitzgerald, Edith, "Straight Language for the Deaf," The McClure Co., Staunton, Va., (1926).
[2] Croker, Jones and Pratt, "Language Stories and Drills," The Vermont Printing Co., Brattleboro, Vt., (1920).
[3] Buell, Edith M., "Outline of Language Work for Deaf Children," B. D. Benson & Sons, 11 Cliff Street, New York, (1929).

Allport[4] says: "the social environment furnishes the stimuli necessary for the acquisition of perfected speech habits."

If the teachers of the deaf would enlarge their conception of "language" to include the psychologist's viewpoint, in all probability a great many of their burdens might be lifted. If they would think of the acquisition of language in terms of neural processes instead of entirely a matter of "who" and "how" questions, a great deal of light might be shed on the need for constant repetitions, superiority of one method of presenting material over another, *et cetera.*

II. Theories of the Origin of Language

Many theories have been proposed as to the origin of language. It is mainly a philosophic question and psychologists have paid little attention to it, their interest being centered more on the question of *why* language originated and *how* it develops.

Herder[5] in his "Ueber den Ursprung der Sprache," presented an early view. He asserted that man picked out some "characteristic" or "mark" (such as the bleating of sheep); this "mark" became a verbal cue, *i.e.*, a *word.* He inquires, "What is all human language but a collection of such words?" Max Müller called this the "Bow-wow theory." It is also known as the theory of onomatopoeia.

The Interjectional (or Pooh-pooh) theory tries to explain the derivation of language from interjections such as express human feelings.

Both the Bow-wow and Pooh-pooh theories were demolished by Max Müller.[6] He says:

> If the constituent elements of human speech were either mere cries or the mimicking of the cries of nature, it would be difficult to understand why brutes should be without language. There is not only the parrot, but the mocking bird and others, which can imitate most successfully both articulate and inarticulate sounds; and there is hardly

[4] Allport, Floyd, "Social Psychology," Riverside Press, Cambridge, Mass., (1924) p. 181.

[5] Herder, "Ueber den Ursprung der Sprache," quoted by Ludwig Noire, "The Origin and Philosophy of Language," p. 4, Open Court Publishing Co., 1917.

[6] Müller, Max, "Lectures on the Science of Language," Vol. 1, p. 424.

an animal without the faculty of uttering interjections, such as *huff, hiss, baa,* etc. It is clear also that if what puts a perfect distinction between man and brutes is the *having of general ideas,* language, which arises from interjections and from the imitation of the cries of animals, could not claim to be the outward sign of *that distinctive* faculty of man.

Noire[7] took up the work where Max Müller left it. He feels that language had its origin in verbal roots which were the result of man's activities. He says sounds which broke out in games or dances became intimately associated (through repetition) with the activity so "as to acquire the power of *recalling the memory* of the action. This is the origin of human thought, for it is the origin of phonetic types (roots)."

To these theories the psychologists add a rather favored Gesture theory. Wundt traced the origin of language to gesticulation. The main lines of evidence supporting this theory come from groups of people using gestures as a means of communication. A number of Indian tribes were known to have developed rather elaborate pantomine language. Similarly, uneducated deaf-mutes carry on communication by means of gestures. The latter is not to be confused with the highly developed system of signs used by deaf-mutes educated by the manual method. Another line of support comes from the development of the infant in whom gesture precedes speech.

III. Relation of Language to Mental Development

One of the chief problems relating to language which has interested the psychologists is the relation of language to thought. Is language synonymous with thought?

In 1887, Max Müller delivered three lectures at the Royal Institution in London on the "Science of Thought." The second of these lectures was entitled "The Identity of Language and Thought." Here he gives us the opinions of a number of the scholars of the Middle Ages on this question. He quotes Abelard (1079-1142) as saying, "Language is generated by the intellect and generates intellect." Hobbes (1588-1679) declared that man has reason because he has

[7] Noire, Ludwig, "The Origin and Philosophy of Language," p. 137.

language. Locke (1632-1704) said that most men—if not all, used words in thinking. Leibnitz hesitatingly admitted the unity of language and thought. He said, "It troubles me greatly to find that I can never acknowledge, discover or prove any truth except by using in my mind words or other signs." Berkeley, on the other hand, felt that words were the greatest impediment to thought.

Müller[8] goes on to say, "We have only to try the simplest experiment and we shall find that thought divorced from language is an utter impossibility."

Can this question of identity or non-identity of thought and language be solved? Watson[9] has pointed out the difficulty of such solution. He says, "To destroy enough of the sensory motor mechanisms to make language organization and hence thought impossible would in all probability bring about the death of the patient." Watson[10] also defines thought as the action of language mechanisms and says it includes all implicit language activity and other activities substituted for the latter.

Interesting as these philosophic discussions may be, it is to physiology that we must turn for more detailed information about the relation of language to mental development.

The age of walking and talking has long been considered of diagnostic importance by child psychologists and doctors. The Shermans[11] say: "The relation between time of first walking and talking and various criteria of intelligence is such that early walking and talking seem to indicate early mental development." Mental growth and sensori-motor development seem as inseparable as the right and wrong side of a piece of material. The only tests that psychologists have been able to devise so far (for measuring the growth of intelligence in infants) are tests of co-ordinated motor re-

[8] Müller, Max, "On the Science of Thought," Open Court Publishing Co., Chicago (1909), p. 56.

[9] Watson, J. B., "Psychology from the Standpoint of the Behaviorist," J. B. Lippincott (1919), p. 316.

[10] Watson, J. B., "Is Thinking Merely the Action of Language Mechanisms?" *British Journal of Psychology*, Vol. xi (1920), pp. 87-104.

[11] Sherman, Mandel, and Sherman, Irene, "The Process of Human Behavior," W. W. Norton & Co. (1929), p. 96.

sponses to specific sensory stimuli and to stimuli from distance receptors.

However, emphasis must be placed on the innate capacity for mental growth rather than on the development of sensori-motor abilities, for we know that mental growth can take place without the highly developed sensori-motor mechanisms of the normal person.[12] For proof we need only to turn to the deaf, the blind, and the deaf-blind. Such individuals have shown that it is possible to develop substitutes for normal distance receptors as well as develop substitute modes of response. Under such limiting circumstances mental growth naturally does not take place as rapidly as under normal conditions. So far all intelligence tests of the deaf have shown at least a two-year mental retardation. The Shermans[13] state "—that deaf children grade lower in intelligence than blind children, which is probably due to the fact that they are deprived of the verbal communication so essential for language development."

Do these early sensori-motor movements really play a part in the development of language? Allport[14] says that they do. "The language of gesture develops from natural and serviceable movements originally of purely individualistic significance." As an example he traces headshaking as a sign of refusal from its inception as a simple avoidance reaction. If these early movements are the beginning of language, by what steps or processes do they become language as we know it?

IV. Stages of Language Development in the Child

McCarthy[15] says:

> Language is indeed a most rapid acquisition as it begins late and attains a high degree of perfection at a very early age. The average child of 18 months is just beginning to use words to communicate

[12] This does not refute our statement above of the unity of mental growth and sensori-motor development as there is little sign of intelligence in these handicapped people until training of substitute sensori-motor mechanisms is begun.

[13] Sherman, Mandel, and Sherman, Irene, *Op. cit.*, p. 102.

[14] Allport, Floyd, *Op. cit.*, pp. 178-179.

[15] McCarthy, D., "Language Development of the Pre-School Child," University of Minnesota Press, 1930.

his ideas to others. Previously, he could communicate with those around him only by crying and by gestures. By the age of four-and-a-half years he is a highly social individual, using language for his every need and desire, not only physical, but intellectual, and in addition he is using all the most complex forms of sentences found in adult conversation, and his vocabulary amounts to several thousand words.

There seems to be no definite agreement among psychologists and other students of language development as to the exact steps in this process. All recognize a certain number of stages through which the child passes, but their designation and demarcation are still debatable. Watson[16] discusses:

1. early reflex and instinctive responses
2. early vocal habits
3. early language habits
4. transition from explicit to implicit language

Allport[17] discusses the genetic development of vocal expression under the following heads:

1. gesture language in infants
2. pre-linguistic or laryngeal stage
3. development of language
   - stage 1. random articulation and fixation of circular responses.
   - stage 2. evoking the articulate elements by the speech of others.
   - stage 3. conditioning of the articulate elements (evoked by others) by objects and situations.
4. development of response to language.

There seems to be fair agreement that there is an early period of vocalization or "random articulation." The child is not only stimulated to vocal activity by those around him but by his own vocalizations which act in a circular reflex manner.

The change from early vocal habits to language habits or real speech seems to depend a great deal upon *the need for language.* As long as all the child's wants are supplied in response to cries, gestures or vocal habits, there is little need for the child to substitute speech for the arm, leg and bodily movements which have served him so well. This is often demonstrated in the pampered children of the rich whose every want is anticipated. Such children often refuse

[16] Watson, J. B., *Op. cit.*, pp. 317-328.
[17] Allport, Floyd, *Op. cit.*, pp. 178-189.

to talk for some time. The Blantons[18] say children reared in such homes are not likely to develop speech until contact is made with the outside world where the child's signs are not understood or obeyed. They cite the case of a three-year-old boy who was brought to them for diagnosis because of complete lack of speech. "This was an only child in the home with the parents and grandparents on both sides. As though this did not constitute sufficient guidance for one child, a *bonne* was also in attendance to anticipate the slightest whim. Three weeks devoted to the education of the child *after the education of the adults had been accomplished* sufficed to arouse the latent speech faculty."

The final stage or stages of language development include the acquisition of writing and reading. Somewhere along the line implicit language responses develop but we do not know whether their development is concomitant with the development of explicit habits or follows it.

Is it possible and desirable to duplicate these stages in children deprived of one of their chief distance receptors? The discussion of the development of language in such a group—namely, the deaf, will follow in another number of the ANNALS.

[18] Blanton, Margaret Gray, and Blanton, Smiley, "Speech Training for Children," The Century Co., (1919), pp. 127-128.

Miscellaneous

I.S.F.

The Meeting of the Convention.—Indications are that the Twenty-ninth Meeting of the Convention of American Instructors of the Deaf, at Jacksonville, Illinois, June 17 to 22, 1935, is to be in every respect a great professional occasion. Present plans call for joint participation by the Conference of Executives of American Schools for the Deaf, the American Association to Promote the Teaching of Speech to the Deaf and the Society of Progressive Oral Advocates. A stimulating program is being prepared and plans are being made for satisfactory accommodations for all who will attend. For reservations it will be advisable to write to Mr. D. T. Cloud, managing officer of the Illinois School, host to the meeting.

Suggested Amendments to the Proposed National Economic Security Act as They Would Affect Schools for the Deaf.—In a hearing before the Ways and Means Committee of the House of Representatives, February 8, 1935, Commissioner J. W. Studebaker of the Office of Education discussed various phases of the proposed National Economic Security Act (H.R. 4120 and S. 1130), soon to be considered on the floor of the House of Representatives and of the Senate, particularly the sections dealing with aid to child welfare services. Among other things, he proposed the addition of a new Title making an appropriation for educational provisions for physically handicapped children.

Details of the proposals of Commissioner Studebaker as they would affect schools for the deaf are contained in this report from the Office of Education.

Suggestions for an additional Title to be added to the bill, to provide for the education of physically handicapped children:

1. In order to enable the Federal Government to co-operate with the State Agencies concerned with the education of physically handicapped children, there is hereby appropriated for the fiscal year ending June 30, 1936, from funds in the Treasury not otherwise appropriated, the sum of $10,000,000, and for each fiscal year there-

after there is authorized to be appropriated $10,000,000, same to be allocated to the United States Office of Education in the Department of the Interior to be expended for the education of physically handicapped children as hereinafter provided.

2. For the purposes of this Act physically handicapped children shall include the crippled, the blind and partially seeing, the deaf and hard of hearing, children having cardiac difficulties, children having tuberculous tendencies, and other children who are physically handicapped to the degree that they need special educational facilities.
3. From the amount appropriated, so much, not to exceed five percent, as the United States Office of Education shall find to be necessary for administering the provisions of this section and for investigations and reports related thereto, shall be deducted annually for these purposes to be available until expended.
4. The remainder shall be allotted to the States on the basis of population, for providing education and educational facilities for physically handicapped children; *Provided,*
   (a) That no allotment under this sub-section shall exceed the sum made available by the State or local community, or both, for purposes of this section;
   (b) That in every case the State shall present proof that there is either embodied in the statutes of the State or otherwise provided a specification designed to assist local school units in carrying the excess burden of cost involved in the education of physically handicapped children over and above that required for educating normal children;
   (c) That a State plan be set up for administration of funds and for their equitable distribution regardless of locality, race, color, or economic status of the children concerned; for supervision of the work done; for necessary inter-school or inter-district arrangements; for transportation; and for other provisions essential to the carrying out of this Act;
   (d) That allotments within the State may be made in conformity with population distribution, administrative organization, and other factors conditioning educational costs;
   (e) That a sum up to 25 percent of the fund allocated to any State may be used for residential schools or institutions for physically handicapped children.
5. When the Commissioner of Education deems a State plan and the administration thereof to be in reasonable conformity with the provisions of this section, he shall approve the same and send due notice of such approval to the Secretary of the Interior and the State Agency concerned.

We are not certain how the changes suggested would affect other classes of physically handicapped children, but we can see how they would operate in the case of schools for the deaf. Of particular concern is the provision "That a sum up to 25 per cent of the fund allocated to any state may be used for residential schools or institutions for physically handicapped children." Certainly the proportion of allotment thus suggested does not fully recognize the function of residential schools in the education of deaf children. One need but recall that of the 19,482 pupils in schools for the deaf in this country, October 20, 1934, a total of 14,652, or

75 per cent, were enrolled in public residential schools. Making allowance for the enrollment in private and denominational schools we find that day-schools, or "local units," have only 21 per cent of the deaf children in school.

Should Commissioner Studebaker's proposals be adopted, we trust they will provide an allocation of funds more in keeping with the importance of residential schools for the deaf.

Certification.—The following new names are to be added to the list of those who have submitted applications for certification under the Conference of Executives of American Schools for the Deaf:

Ruth Adams Cantrall, Tulsa, Oklahoma.
Helen Louise Hulick, California School.
Mae Ritchie Moffett, Saskatchewan School.
Naomi Nortz, Utah School.
Ralph LeRoy Parks, Florida School.
Philip Clive Potts, Idaho School.

Death of Mr. Wheeler.—The death of Mr. Frank R. Wheeler, principal of the American School for the Deaf, West Hartford, Connecticut, on January 16, 1935, brought forth many expressions of sorrow. Among them the most touching were a resolution adopted by the teachers and officers of the school and a minute voted by the board of directors of the school. They are as follows:

By the Teachers and Officers of the American School for the Deaf:

WHEREAS the death of Frank Rowland Wheeler, for twenty-two years Principal of the American School, at Hartford, for the Deaf, has taken from us an honored leader, it is fitting that his associates at the American School give public expression to their sorrow, and to their appreciation of him and of his work.

During his years at the American School, we have felt Mr. Wheeler's just but kindly guidance in all plans made for our work; we have known his humane interest in furthering the welfare of all under his care; we have seen his friendly influence extend beyond school days into the lives of all who knew him here, and we know how greatly his presence will be missed.

But in our sorrow we must not fail to rejoice for him who has gone, that his work was brought to such a measure of success; that friends rise up to call him blessed, that the peace that passeth all understanding is now his.

Therefore, be it resolved that to Mr. Wheeler's family we offer our sincere gratitude for the privilege of having called him friend and

Principal; and our prayer that in their sorrow they may be sustained and comforted by the strength of the Everlasting Arms.

And further, be it resolved: that a copy of these resolutions be sent to Mrs. Wheeler; to the Board of Directors, to the *American Annals of the Deaf;* the *Volta Review;* the *Hartford Courant,* the *Hartford Times* and be printed in the *New Era.*

(Signed) MARY GREY BARRON
ANNE E. TERRY
WALTER G. DURIAN

for the Teachers and Officers of the American School for the Deaf.

By the Board of Directors of the American School of the Deaf:

In the death on January sixteenth, nineteen hundred and thirty-five, of its principal, Frank Rowland Wheeler, the American School for the Deaf has suffered an irreparable loss, and the board of directors hereby express their deep sense of grief in parting from so faithful a servant.

For more than twenty-one years as principal, Mr. Wheeler had won the complete trust of the members of the board as well as their genuine regard for him personally. He was not only an able administrator and successful educator, but he had the rare quality of outward serenity under stress, which inspired confidence in all who came in contact with him. Endowed as well with a warmly sympathetic nature, it is little wonder that his charges, handicapped by their affliction, instinctively felt secure in his care, and gave him both their love and respect as to a father.

During Mr. Wheeler's term of office, the American School has prospered exceedingly, due very largely to his unselfish devotion to its needs, and to his wisdom in handling the many difficult situations which he encountered, especially at the beginning of his work and again in the very difficult period of transition from the old school on Asylum avenue to the new one in West Hartford. Under his guidance the school has grown in numbers and in efficiency. New methods have been introduced, especially that of visual education through pictures, slides and films. The industrial and art departments have been much strengthened, especially that of printing. Athletics, in which he took an active interest, have been developed and extended. Dancing and classes in rhythmics have been encouraged, as well as other forms of education through recreation; and training of the partially deaf by audible instruction has been introduced. In short Mr. Wheeler showed himself to be progressive where innovation meant real advance, while remaining conservative in preserving the best that the school has stood for, for well over a century.

Finally the directors wish to express their appreciation of Mr. Wheeler's sound business ability. This has resulted in the remarkable economy with which the American School has been conducted. He repeatedly discovered ways of saving expense in the administration of the allowance provided by the state and the income from the school's slender endowment, so that when a deficit seemed inevitable he found a way out. It is no wonder that other and wealthier schools tried to tempt him away from Hartford, but his heart was here, and he continued to do his chosen work modestly and loyally until his last illness ended a life of devotion to duty and to the high ideals he had ever before him.

In adopting this minute for their records the directors of the American School for the Deaf wish also to express their gratitude to Mrs. Wheeler for the invaluable service she has rendered the school in her

constant and effective interest in the physical welfare of the pupils and the enthusiasm with which she gave her time and strength to their pleasures and entertainments. To her and to her daughter, Mrs. Ralph Campbell, in their great bereavement the members of the board extend their heartfelt sympathy.

New Dormitory for the Utah School.—This school is completing a new dormitory for boys (both the deaf and the blind). The building is a PWA project and will house one hundred boys. It will contain 28 three-bed rooms, four four-bed rooms, four living rooms, four supervisors' rooms, six shower-toilet rooms, three playrooms, storerooms, etc. It will be fireproof and will cost $105,000.

Fire and Storm.—An Associated Press despatch in the Washington *Evening Star,* October 30, 1934, reported that on the night previous a fire broke out among the main buildings of the Chinchuba Institute, near Covington, Louisiana. The deaf children, some 58 in number, ranging in age from four to twenty, were all led to safety by the Sisters of Notre Dame, who conduct the institution.

A recent number of *Roa-Geppo,* Japanese gazette for the deaf, tells of the havoc wrought by a devastating typhoon and flood which struck the western coast of Japan, in the vicinity of Osaka, on September 21. Pictures show the complete destruction of the Osaka City School for the Deaf, but fortunately with no loss of life among the children or teachers of the school.

The Deaf-Blind Department of Perkins Institution.—In another part of this number of the ANNALS appears a statement by Director Gabriel Farrell, of Perkins Institution and Massachusetts School for the Blind, Watertown, Massachusetts, explaining how Perkins Institution is attempting to broaden the scope of its work with the establishment of a teacher-exchange plan. Further details are contained in this letter from Mr. Farrell, under date of November 14, 1934:

We are glad to send you information regarding our new policy in the Deaf-Blind Department. Enclosed is a statement explaining the two features of our plan, first admitting children accompanied by teachers and second exchanging teachers with schools having doubly handicapped children. This plan began with the opening of this school year and under the first part we admitted Helen Siefert of Bridgeport, Nebraska, with her teacher, Miss Margaret Hoshor and Carmello Otero of Newark, New Jersey, with Miss Ruth L. Keyes as her teacher.

Under the second part we engaged as our exchange teacher Miss Ruth Stackpole who has completed our course for training workers for the blind and the normal course offered by the Clarke School for the Deaf in Northampton. She is at present at the Virginia School for the Deaf and Blind and in January goes to the Michigan School for the Deaf and in April to the Minnesota School for the Blind. At the present time Miss Pauline Walker of the Virginia School is in residence here and teachers from the other two schools will be here according to the schedule above.

Mr. Farrell in a later communication, February 18, 1935, states he will be glad to receive requests for the exchange teacher for next year. At the present time the institution has had only one such request for the first part of the school year.

In a recent radio address Mr. Farrell gave this description of the methods now employed in the education of the deaf-blind:

It is indeed a far cry from the early methods to those of the present. With the pupils now at Perkins spelling in the hands is not allowed and all forms of sign language are taboo. From the outset the pupils are taught articulate speech and are given every opportunity for receiving impressions of the human voice. These impressions are received through vibration. The method employed is for the deaf-blind child to place his thumb on the mouth to feel the vibrations of the lips and the fingers on the throat to sense the vibrations of the throat muscles. With the hand placed in this way the teacher talks to the child who cannot hear until he learns to associate certain vibrations with acts or objects. This takes weeks and months of careful and unceasing work, but the progress that is possible is its own compensation.

Teaching to speak is even more difficult for special technique is essential. At the first, the child has to be shown how to form his lips and hold his tongue to make the fundamental sounds. Beginning with "oo," "ar" and in some instances "ee" the child has to learn to give these sounds in a natural voice. It must be remembered that deaf-blind children are not "dumb" because they are not able to speak but because never having heard people talk they are not able to imitate. It is through imitation that the power of speech comes to the normal child. The deaf-blind child must be trained to hear through vibration and to build word meaning into the delicately varying vibrations.

The 150th Anniversary of the Founding of the School at Prague.—From *Revue Générale de l'Enseignement des Sourds-Muets,* December, 1934, we obtain this item of information concerning the school for deaf children at Prague:

One of the oldest institutions for the education of the deaf, the institute at Prague, is making preparations for the 150th anniversary of its founding. It was established under Joseph II, and owes its inception to the school of the Abbé de l'Epée.

Emperor Joseph II, on a visit to Paris, was fascinated by the success obtained by the Abbé de l'Epée whom he had seen instruct deaf-mutes. On his return to Vienna, he requested Count Künigl, who was

president of the Lodge of Freemasons of Prague, to establish in that city an institution similar to the one he had seen in Paris, and the emperor himself founded one in Vienna. The count heeded the desire of the emperor and that was how in 1786 was founded the school at Prague, the fourth of such schools started in Europe. The first director, M. Berger, employed manual methods which he obtained from Bedrich Stork, head of the Vienna institution and former pupil of the Abbé de l'Epée. At present, this institution is installed in its own property which is a large and modern structure, near the Kinska zahrada, one of the most beautiful parks in Prague. It has 125 pupils of both sexes. The celebration will be held in 1936, with state participation. On that occasion, there will be organized a congress of the deaf themselves and a congress of instructors of the deaf. It is certain that many foreign colleagues will take advantage of this event to pay a visit to beautiful Czechoslovakia, and to become acquainted with its institutions and the methods employed in the instruction of the deaf children of that young republic.

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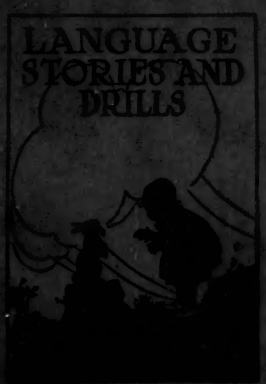

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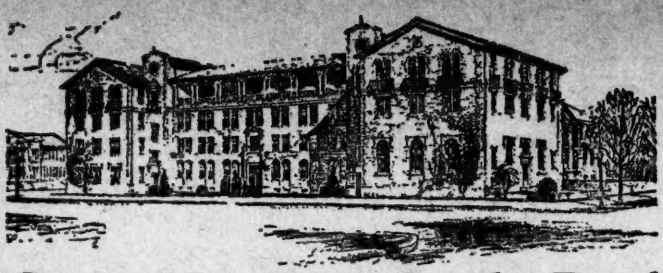

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